# CORONADO AIRPORT

## A Project in Flight

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College of Architecture, Planning, and Landscape Architecture | 2015

# Coronado Airport:
# A Project in Flight

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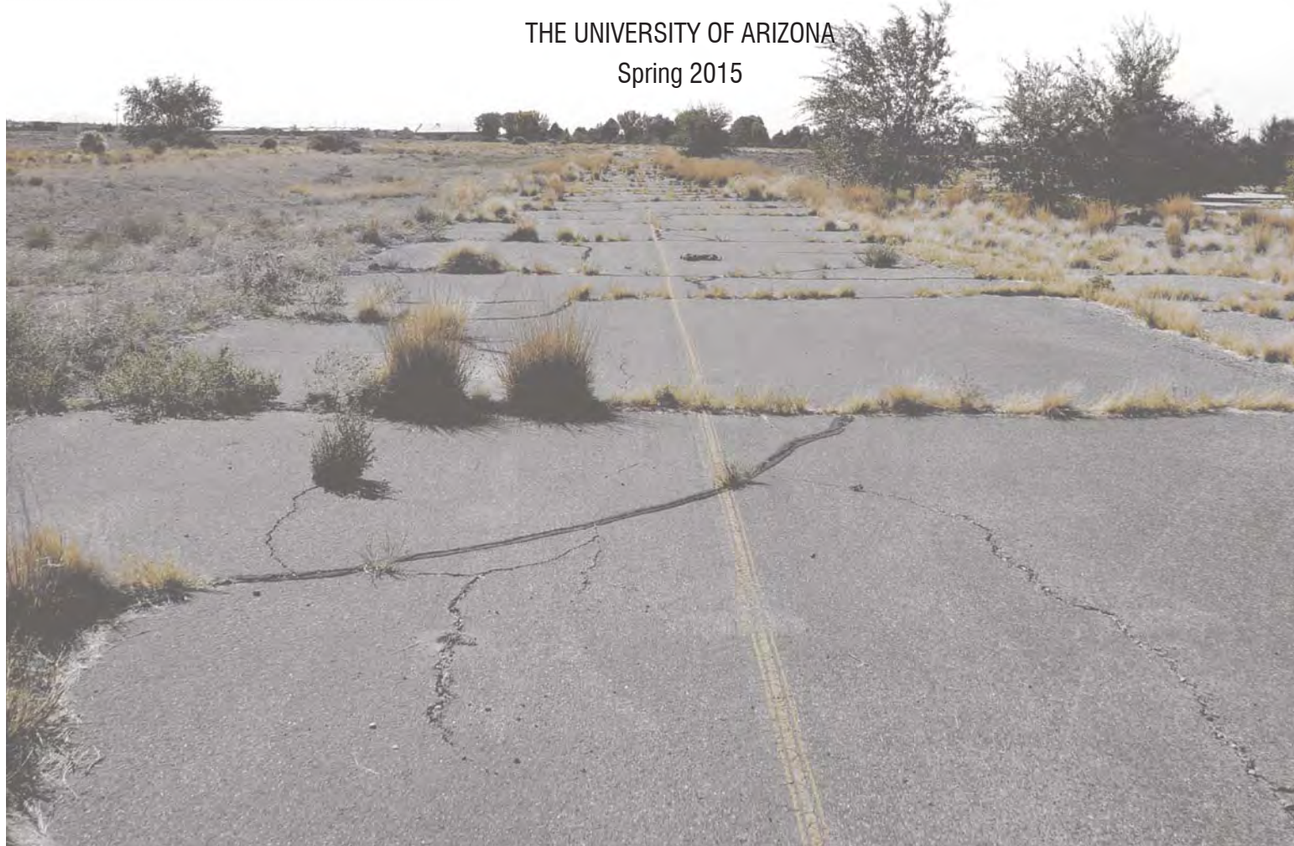

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Lastly, thank you to my family for their endless confidence in me and continually supporting my dreams.

# ABSTRACT

Located at the junction of different urban tracts in Albuquerque, New Mexico, the abandoned Coronado Airport was once a popular small aircraft airport.  Operational from 1961 to 2001, the Coronado Airport was ultimately closed due to safety concerns, a fate shared by other small aircraft facilities around the U.S. Currently the 268 acre abandoned site contains only the two runways and several large concrete foundations where the airport buildings and hangars were once located.

Although in a state of disrepair and left with only remnants of its former use, the site has the opportunity to become an effective and iconic space for the City of Albuquerque and surrounding communities.  The Coronado Airport redevelopment project could also provide design and reuse concepts applicable to other equivalent sites within urban areas around the country. Through visual observations and site research this is a prime location to develop multi-purpose functions including a large natural park in an urban setting, alternative forms of active and passive recreation, while acting as a landmark for the city.

The Coronado Airport redevelopment project explores the challenges of creating a destination for both locals and visitors through the reuse of an abandoned site while showcasing its transformation over time and acknowledging its former use. Moreover, the design incorporates elements of this diverse landscape context, its past use as an airport, the significant role of flight in the region, and new physical and metaphorical connections that can be enhanced and created.

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# INTRODUCTION

The Introduction section of this report provides the information needed to support the purpose of this research and design proposal, the goals of the project, and the methods that were applied throughout the entirety of the report and design process.

## Context/ Background

## Purpose

## Research Question

## Goals + Objectives

## Methods

# CONTEXT/ BACKGROUND

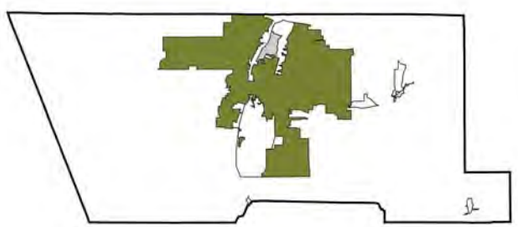
**Location:** Coronado Airport, Albuquerque, NM
10000 Pan American Freeway NE

**Approximately 268 acres**

Coronado Airport, now an abandoned airfield, sits with only small reminders of its past function. Coronado Airport was once home to more than 100 small private airplanes and hosted around 20 take-offs and landings a day (Soussan 1998). It was operational from 1961 until November 30, 2001 ultimately closing due to disrepair and safety concerns. Located originally on the outskirts of the City of Albuquerque, growth and development have surrounded the site with a mix of different uses leading to an increase in its value (Velasco 2001). The site is bordered by: Sandia Pueblo Reservation and the Sandia Resort and Casino and golf course (northern border); a retired ball park, a residential neighborhood, and the iconic Sandia Mountains (eastern border); a small cemetery surrounded by several different industrial type businesses, including car repair shops and construction companies (southern border); and Interstate 25 and Balloon Fiesta Park (western border).

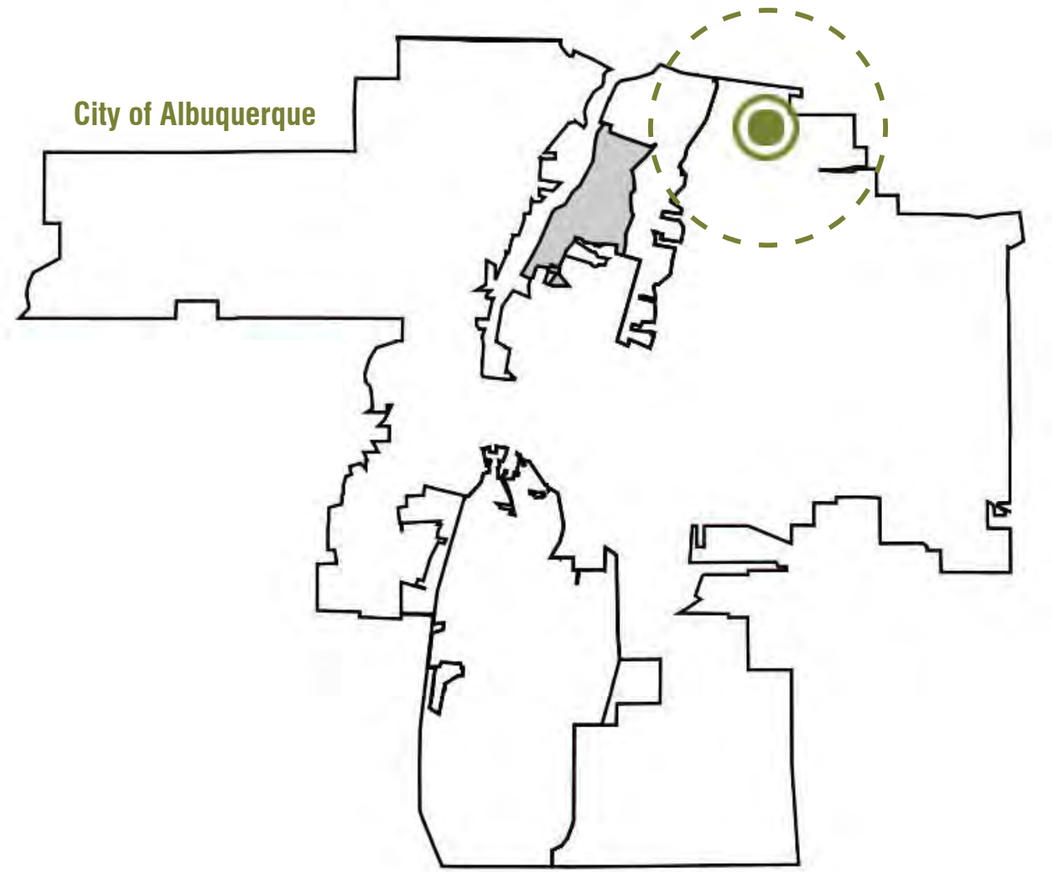
New Mexico

Bernalillo County



The adjacent Interstate 25 runs north and south and is one of the main access routes into the City of Albuquerque.
After the airport's closure the hangers that housed the numerous planes were sold and moved to other airports around the state, leaving only scattered foundations and a crumbling runway. After 39 years as an airport, the site now waits for a new direction to take flight.

City of Albuquerque



# PURPOSE

The built environment is in continual flux, changing and adapting every day to meet human needs. “Each aspect of the built environment is created to fulfill human purpose” (McClure, Bartuska and Bartuska 2007). As needs and thoughts change, the form of our built environment changes, leading to new development and causing the old to either adapt or be erased completely. The built environment can be seen everywhere, even in places you would least expect it. It includes anything that has been made, arranged, maintained or controlled by human intervention (McClure, Bartuska and Bartuska 2007).

Every day more and more undeveloped land is threatened and altered from its natural form and function into a state of built form. “Between 1992 and 1997, the total land converted to developed land was 11.2 million acres; this equates to a development rate of 2.2 million acres per year” (Vesterby and Krupa 1997). Once the natural environment has experienced human intervention it does not always have the potential to return to what it once was. The human intervention imposed on landscapes has lasting effects leading to fragmentation of natural connections and completely disrupting ecological functions, aesthetics, and possibly historical significance. As urban areas continue to grow, places are often left abandoned and overlooked. These abandoned places have the opportunity to serve important functions and purpose in our built environments, without further disturbances of relatively natural areas.  By utilizing already disturbed landscapes for development, natural lands are preserved and an opportunity to enhance ecological form and function on the site is made possible.

## RESEARCH QUESTION

How can we utilize the abandoned Coronado Airport to meet future needs of the region and creatively and sensitively highlight its transformation over time?



## GOALS + OBJECTIVES

- Highlight the relationship between the built and natural environments and transformation over time

  Utilize existing infrastructure, including one or both runways, to facilitate activity and provide visual cues of the past
  Reconstruct specific areas to provide for new activity and uses

- Create a year round landmark park for locals and visitors alike

  Create a site accessible by multiple modes of transportation Create spaces for both active and passive recreation
  Create a gateway into the Albuquerque area
  Utilize as an extension for viewing Balloon Fiesta events

- Enhance emerging ecologies on site appropriate for a park setting

  Aid in reestablishing ecological health (plant and wildlife)
  Create areas for water harvesting
  Aim to be minimally reliant on irrigation and maintenance

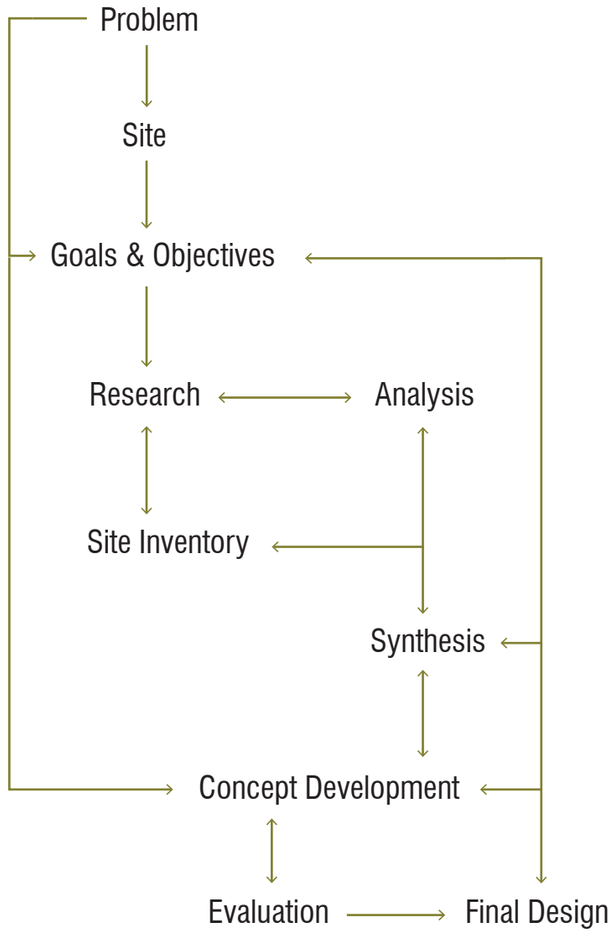
## METHODS

To identify a potential solution to the posed research question, a cyclical research approach was taken and adapted throughout the process.

This research was initiated through first identifying an overarching topic and selecting an appropriate site. Based on the topic and site selected goals were set to help address the research question. The goals, in turn narrowed down the research into three specific topics, adaptive reuse, landmarks, and natural parks in urban settings.

The three topics were explored through use of journal articles, newspaper articles, books, and websites. Projects of similar character were also reviewed to help identify possible design implications as well as areas that required more research. Simultaneously with the literature and project reviews spatial research and site inventory were also conducted.

After reviewing the literature, exploring real world projects, and analyzing the site, opportunities and constraints were identified spurring the concept development and design stage of the project. The concepts were reviewed in a cyclical process which lead to refining the spatial layout and program until an appropriate solution was reached. The final solution addresses the research question and is defended by the research process.






# LITERATURE REVIEW

The literature review provides information needed to inform the three main research topics of this project: adaptive reuse, landmark parks, and designing natural parks in urban settings. These three focus areas act as a lens in which to explore the areas of ecology, built environment, and functional and social site layers. Specifically, the literature review serves as a foundation on which to propose a design for the site.

## Adaptive Reuse

Utilization of built remnants

Fragmented ecologies

## Landmark Parks

Memory/ Connection

Education and Interpretation

## Natural Parks in Urban Settings

Trail Systems

Active and Passive Spaces

Water Harvesting



# ADAPTIVE REUSE

*"For many American cities, as landscape surfaces accumulate through horizontal urbanization, it becomes paramount to locate waste and identify potential problems and opportunities for reusing it" (Berger 2006).*

Adaptive reuse can be defined simply as the practice of reusing an old site and giving it a new purpose other than what it was originally designed for (Wikipedia 2014). Adaptive reuse can be applied at many different scales and applied to different elements such as landscapes or structures. It has been used on brownfield sites, like landfills and abandoned industrial spaces, as well as with structures of significance. It is thought of by many to be a key factor in economic development as well as land conservation (Berger 2006). The practice of adaptive reuse is becoming a more popular solution in development projects by taking sites that are viewed as problem areas and converting them into areas of opportunity and rebirth. "Even derelict and degraded industrial areas can be filled with a new spirit and can be made worth living by keeping visible the spirit of the existing site, by applying design strategies that contribute to economic prosperity, social cohesion and environmental quality" (Loures and Panagopoulos 2007). The spirt of the site is important in that it connects the new use with the sites past, leading to recognition of what was once there and how it has changed for the better. In order to recognize and understand a sites many layers and its immense temporality, one must begin by extricating its layers and noting their importance. The layers of the landscape act as a montage, each identifying and telling a story about the relationships between human and nature (Taylor 2015). These layers can aid in design decisions and guide the site to its new form, use, and program, while still anchoring it to its past. This can be accomplished by including built remnants as well as ecological alterations.

> Landscape and open space contain a wealth of information layers. These layers of information can exist physically, they can be visible or invisible, they can be abstract like cartographic grids, or remembrances. The challenge is to make the right selection, to liberate our senses and to be open to new impressions. (Loures and Panagopoulos 2007)

Loures et al. suggest that not all layers of a site can or should be brought forward and recognized in adaptive reuse projects. Decisions that must be made in determining what information to bring forward include: time, events, uses, users, and wants. Those decisions in turn will dictate form and function.

In dealing with a landscape adaptive reuse project built remnants and site ecology play a significant role in site health and future functions. The ecology of a site can either be redesigned or restored to a previous time period of its life; it can either be continuously maintained in a specific state or designed to remain dynamic and allowed to evolve naturally, which would demonstrate the juxtaposition between the built environment and the natural environment. Built remnants on a site can be utilized to dictate form, serve a new purpose, remain in its current state to act as a reminder of the sites past, or be completely removed depending on the condition and significance to the future use of the site.

Ultimately there are numerous questions that need to be answered and analyzed before deciding the best solution for a reuse project. The distinct topics of utilizing remnants and mitigating fragmented ecologies is discussed further thought out this section.

### Utilization of site remnants

Adaptive reuse projects deal with sites that have been abandoned over an extended period of time and typically have fallen into decay. These once functioning, now decaying wastelands, have pieces of their past left behind from their previous use.  These remnant pieces on the landscape can be both visible and invisible, built forms and waste pollution, fragmented ecologies and contamination; regardless, all remnants offer potential opportunity and constrains for the future use and design of the site.

Before developing a new plan and design for an adaptive reuse project the history and context of the past use should be evaluated to help determine whether or not the previous use will be utilized and for what purpose and physical form. Remnants, both in good and bad condition, need to be documented and analyzed to determine their potential use and/ or function in the new development of the site. Potential uses and functions based on site remnants include the influence of form, creation of interpretive elements, and restoration or rehabilitation. With the juxtaposition of nature and built becoming more closely knit on an abandoned site, the beauty of these contrasting elements begins to emerge and strike interest creating a want for more information of the sites previous development and its future growth (Keil 2005)

By utilizing the already built form of a space, designers and users are given a glimpse into the past. This opportunity helps create a greater appreciation for not only the immediate space, but for the surrounding context as well. From an economic approach, reuse of space and structures has the ability to save money. Structural elements, if in appropriate condition, can offset the cost of new construction and save on material cost. However, there are instances where it is more cost effective to remove the structural



elements because their physical condition may be too decayed and unsafe to salvage. Additionally, reusing space and structures can potentially revitalize surrounding communities and encourage more growth and development as well as  stronger appreciation for the community in a neglected area.

**Fragmented Ecologies**

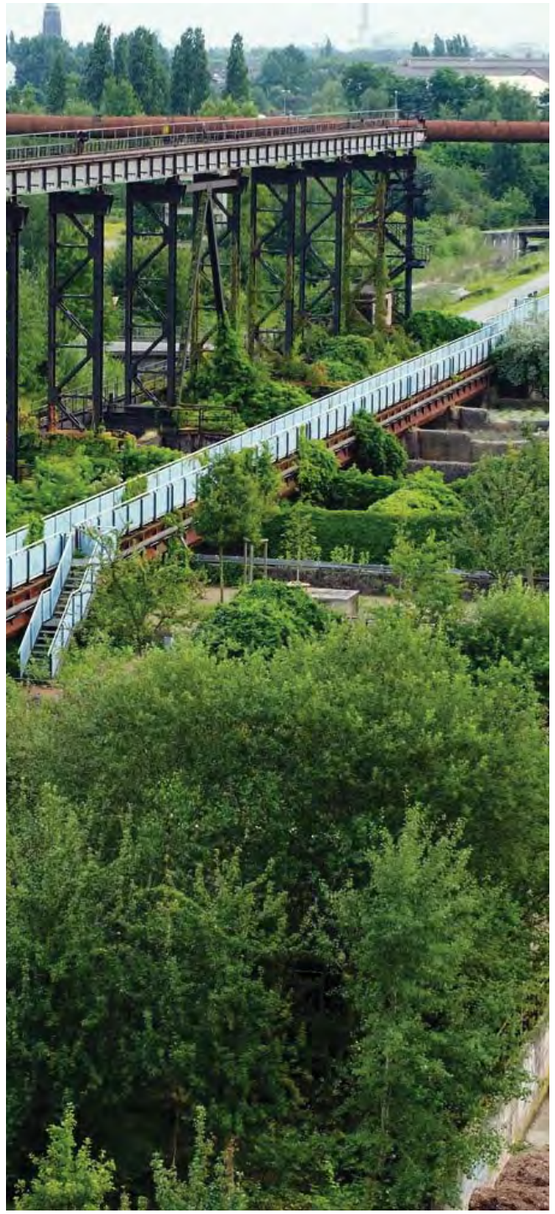
*“We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.” (Sands County Almanac, Aldo Leopold)*

A healthy ecology is one of diversity that can thrive and continually renew its self while being an asset to its surrounding communities. However, when the built environment is imposed on a landscape biologically diverse ecological communities are often turned into monocultural communities requiring human care and maintenance. “Traditional approaches in landscape development generally require frequent lawn watering, mowing, pruning, weeding, trimming, and the liberal application of chemical fertilizers and pesticides. This perpetual cycle of care is executed in the name of maintaining a desired visual aesthetic that is repeated over and over with little relationship to site or regional environmental functions” (Patchett and Wilhelm 2015). The built environment strips the natural landscape of its form and functions and alters it into a manicured disconnected patchwork completely lacking community and connection. The destruction of the natural landscape contributes to soil compaction, erosion, alterations to nutrient content, and removal and reduction of biodiversity making it difficult for growth and regeneration of ecological communities.  “Landscape fragmentation – the process of breaking up contiguous landscapes or their elements by human act – has profoundly transformed the spatial pattern of most if not all natural landscapes around the world, and has become one of the greatest threats to biodiversity and ecosystem functioning” (Wu 2009). Landscape fragmentation can result in loss of habitat, a decrease in patch size while increasing the amount of patches in a given landscape, and an increase in isolation and the breakdown of remnant patches. This leads to the disconnection of flows, loss of stability, and the alteration of functions, ultimately meaning an unhealthy ecosystem.

“The extent to which the genetic diversity of the place can coalesce into a self-sustaining, self-replicating system is the extent to which the health of the system develops” (Wilhelm 1996). It takes a lot of time to rehabilitate degraded landscapes into a position of full health. They must reestablish structure, process, and functions without assistance from outside sources. Once the landscape has sufficiently thrived on its own it will develop resilience to future stressors and disturbances ultimately leading to a healthy state.  It is not always possible to achieve the goal set out to rehabilitate a disturbed ecology, but additional steps can be taken to aid in the process. To establish and maintain the health of a landscape cooperation, communication, and understanding are essential components that must be met by users, owners, and all authorities associated with the landscape (Society for Ecological Restoration 2008).  Although a rehabilitated landscape may not meet the same visual aesthetic as its urban surroundings, a healthy, well integrated ecological system will still be seen as attractive.

In order to propose rehabilitation solutions one must understand the history, context, trajectory, as well as current and future pressures of the landscape.

The reuse of an abandoned landscape provides the opportunity for fragmented ecologies to become enriched and healthy again. Although the original ecology of the site cannot be fully restored to its natural state and structure, it can potentially be rehabilitated back into a biologically healthy state while also enhancing the surrounding natural systems and flows. This can be accomplished through proper land management practices that focus on long term resilience as opposed to short term fixes. The overall goals of rehabilitating fragmented landscapes are to protect biodiversity, increase connectivity, prevent further habitat loss, and foster sustainable development (Society for Ecological Restoration 2008). To guide and facilitating this process and application there are a number of strategies and methods used to assess progress.





**Ecological Restoration Planning and Management strategies include, but are not limited to:**

•The expansion and restoration of core protected habitats, within an ecosystem approach, in order to maintain the diversity and resilience of native plants and animals
•The reduction of landscape fragmentation to reduce edge effects where ecologically appropriate and provide habitat, species dispersal, and migration opportunities
•The restoration of buffer or transitional zones in critical or sensitive areas such as riparian ecosystems
•The restoration of wildlife corridors and stepping stone habitats to ensure adequate flows within the landscape matrix
•The prevention of further habitat loss
(Society for Ecological Restoration 2008)

**Attributes for assessing restoration progress from The Society of Ecological Restoration International include:**

Human systems
• Balance exists between ecological processes and human activities such that human activities reinforce ecological health and vice versa.
• The people who are dependent on the ecosystem have a key role in setting priorities and implementation.
• The ecosystem serves as natural capital for environmental goods and services. Indicators may be more specific according to the nature of the restoration goals. For example, one goal may be that the restored ecosystem will provide habitat for rare species or will harbor a diverse gene-pool for selected species. Yet other goals of restoration may be to provide aesthetic amenities or to accommodate activities of social consequence, such as the strengthening of a community through the participation of individuals in a restoration project.
(The Society of Ecological Restoration International 2004)

Ecosystems
• The ecosystem contains a characteristic assemblage of the species that occurs in the reference ecosystem and that provide appropriate community structure.
• The ecosystem contains indigenous species to the greatest practicable extent.
• All functional groups necessary for the continued development and/or stability of the ecosystem are represented.
• The physical environment of the ecosystem is capable of sustaining reproducing populations of the species necessary for its continued stability or development along the desired trajectory.
• The ecosystem apparently functions normally for its ecological stage of development, and signs of dysfunction are absent.
• The ecosystem is suitably integrated into a larger ecological matrix or landscape, with which it interacts through abiotic and biotic flows and exchanges.
• The ecosystem is sufficiently resilient to endure the normal periodic stress events in the local environment that are an integral part of the dynamics of the ecosystem.
• The ecosystem is self-sustaining. It has the potential to persist indefinitely under existing environmental conditions. Aspects of its biodiversity, structure and functioning will change as part of normal ecosystem development, and may fluctuate in response to normal periodic stress and occasional disturbance events of greater consequence. As in any intact ecosystem, the species composition and other attributes of a restored ecosystem may evolve as environmental conditions change.

## Summary

The rehabilitation and reuse of a neglected space is  a challenging process that takes considerable time, research, creative thinking, interest, and involvement.



# LANDMARK PARKS

*"Any landscape is a condition of the spirit"*
*-Henri Frédéric Amiel*

More often than not places are identified by distinguishing characteristics or iconic elements, often referred to as a landmarks (Stilgoe 1987). A landmark informs us about something of importance and can be defined as a physical object or feature that is easily identifiable, or as an event indicating change. Landmarks can instill memories, feelings, and connections as well as provide a lesson. They are timeless elements whose messages will be carried forward into future generations. . Landmarks are "a cultural construct, a mirror of our memories and myths encoded with meanings which can be read and interpreted" (Taylor 2015). Landmarks can be either man-made or nature made, but both communicate the importance of itself or its setting and become a well-known place and create connections for its viewers. Some famous examples of large landmarks include Mt. Rushmore, Yosemite, the Golden Gate Bridge, the Grand Canyon, and Central Park, but not all landmarks are famous well known places. Some landmarks can be as small as a single pond in a city park, or a bridge connecting two sides of a river. When landmarks are referenced and called upon they are recognized and associated with a specific meaning or context. These landmarks draw people in and instill a memory leading users to form a lasting and shared connection with that place and their time spent there

Landmarks create an identity for a place and identity is critical to genus loci, or more simply said, creating a sense of place (Taylor 2015).

## Memory

Memory is a form of archiving places, feelings, thoughts, and images. Memory is cataloged in two ways, personal memory and collective memory. Personal memory is something held and created by an individual, their own thoughts and feelings which are distinct and specific to the individual. Collective memory is something shared by several people and is given to them through story telling or through the sharing of information. The collective memory is often carried forward through time and shared amongst several generations. "Memory remains strong because it is grounded in sensory experience…" (Stilgoe 1987). Memory is essential in the creation and identity of a landmark.  Landmarks typically arise as a result of an embedded memory that has established a meaning or a reference placing value on a place, resulting in the creation of a landmark (Shum 1998).

When recalling a memory, you recall the place in which it occurred and the feelings that you had while being there. For example, recalling a memory of a childhood playground would lead you to remember the structures that were there, the games you played, the feelings of adventure you experienced, all captured in a place of meaning, a landmark for your childhood.

Memory is a timeless thing that can influence many different feelings, decisions, and views of things in life. Memory is what makes place and time special and meaningful to both individuals and to the masses.

## Interpretation

"Landmarks are defined by our vision and interpreted by our minds" (Meinig 1979).

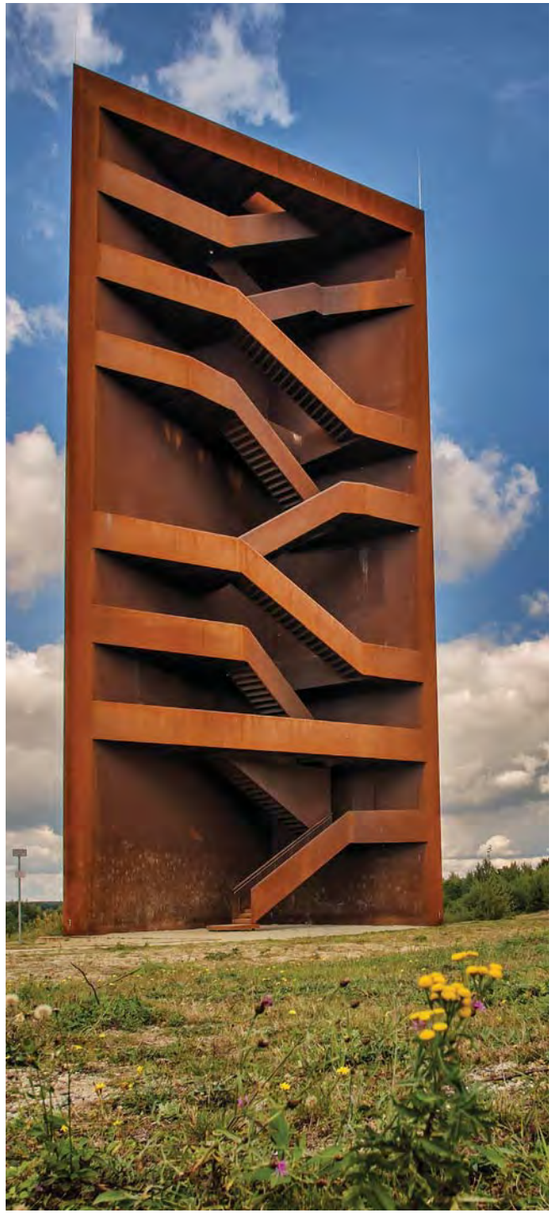
Interpretation of a space or a landmark relates to memory in that there are personal interpretations and collective interpretations. Personal interpretation is the individuals definition and understanding of the landmark. It can mean completely different things to different people based on their understanding and vision of what they see. Collective interpretations are usually

provided and clearly labeled through the use of signs or information pamphlets/ handouts. For example, famous landmarks, such as Yosemite, are often labeled with signage and provide informational tours that plainly state information about the landmark.

Interpretation provides meaning, ultimately resulting in a connection, whether it be positive or negative, it links you to a place or a thing

### Cultural Connections

Every landscape holds connections to its past either through physical elements or through shared stories. "…landscape is a cultural construct, a mirror of our memories and myths encoded with meanings which can be read and interpreted." (Taylor 2015). Just like the meanings of words that are associated with places or land formations, a story and an understanding of place is shared between people and generations.



Cultural connections to a place or landmark are carried on and built upon over time by its community and often times considered sacred space.

Ultimately, both memory and interpretation together create connection. These three things can be very personal and instil strong feelings that influencing many different things, from the way you use a space/ landmark to the way in which you share it with others. Landmarks are strong elements that make you think and question and make you crave more from that space.



# NATURAL PARKS IN URBAN SETTINGS

*"Beauty is not found in the excessive, but in what is lean and spare and subtle."*
*- Terri Tempest Williams*

The word park often sparks the idea of nature, open space, recreation, open green turf, designated play space, etc., but rarely natural or wild spaces. This is because natural is typically understood as "growing spontaneously, without being planted or tended by human hand" and parks are defined as a man-made space. When the terms natural and park are put together they break the mold and introduce a new kind of space and opportunity for people and wildlife within the urban environment to work together.

A natural park can be a natural area that has not been disturbed by [excessive] human intervention and is established as a preserve or refuge or it can be a previously disturbed site in need of rehabilitation and restoration that will be reestablished with its past ecological and natural functions creating a new "natural" space. To make a natural park more than just open space it needs to feel welcoming and be functional for all types of user. Other things to consider include: access and circulation, what areas will be maintained or unmaintained (allowed to remain dynamic), and the different levels of recreation that will take place there. A natural park in an urban setting should be designed as a place for discovery of nature where users can engage with the landscape while remaining in the city.

### Trail Systems

Trails come in all shapes and sizes essentially providing the pedestrian circulation for a site. Trails can be considered sidewalks or pathways, they can be paved or unpaved, and they can support a variety of users ranging from walkers and runners to cyclist and horseback riders. No matter the type of trail or type of user a trails main purpose is to move people. Trails should be designed and constructed with consideration for surrounding ecologies and natural resources, viewpoints and cultural amenities, as well as opportunities for education and interpretation.

The initial consideration in designing a trial is the user and the types of activities that will take place on the trail. Trails can be designated as either active or passive depending on the type of activity and the speed at which people are moving. The next steps in trail design involve spatial layout and circulation as well as access and entry points. These decisions are determined by topography, natural systems, viewpoints, existing circulation, and adjacent amenities. The trial layout should avoid long straight sections because they can become boring and monotonous for users. Instead the trail should meander and curve through the site in order to provide interest and excitement (Americantrails.org 2015). Once the layout and circulation have been determined materials and maintenance strategies can be decided upon. The materials will be dependent on the scale of the trail, available resources, and possible obstacles like washes or areas to be preserved. Overall, the trial should immerse its users into the surrounding environment and provide a sense of place by allowing them to view landforms and natural features from a variety of perspectives (Nps.gov 2015).

All trials should instill a sense of safety for its users. Physical safety and perceived safety are both factors that influence trail design decisions. In response to physical safety trials are planned according to use with regard to materials, scale, signage, and proper maintenance. For example, different user groups travel at different speeds, which can lead to conflicts if not separated or properly planned. To help avoid conflicts trails should be marked with appropriate designations to help guide and inform all users throughout a site (Trail Design Guidelines 2015). When these things are not taken into consideration trails can become overcrowded or misused and fall into

disrepair often discouraging users from using them (Gobster 1995). To achieve the mental perception of safety trails need to have clear sight lines, lighting, and user presence. Uninhibited views can be achieved by using a proper plant palette and regular maintenance. Trees and shrubs can be planted and maintained so they might provide a clear field of vision that does not compromising users feeling of safety (Gobster 1995). By designing and maintaining trails with a strong sense of both physical and perceived safety they are more likely to be used and treated properly.

Trails can offer a diverse range of uses to people of all ages and abilities. Other than observing nature and scenic beauty trails can also draw in users for exercise and relaxation opportunities as well as social interaction (Shafer, Lee and Turner 2000). To achieve a range of diversity in users and in the overall trail system a variety of trail options should be made available. Trails should

be designed to accommodate both single uses in some areas, like bicycles only, and multiple uses, like walking and running plus bicycles, in other areas. “Although trail facilities can often be successfully shared, it is also important to have some locations where hikers need not fear being overtaken by mountain bikes, places where mountain bikers know there aren’t supposed to be hikers, and trails where horses won’t need to shy away from cyclists” (Trail Design Guidelines 2015).

Trail systems and site circulation are essentially the backbone and the main contributor to the movement and choreography of a site and how people decide to use and access the space. The layout and planning of trails and circulation requires consideration of numerous points.

The following four goals for trail design were suggested by the Portland Parks and Recreation Trail Design Guidelines.

**Four Main Goals for Trial Design:**

Safety

- Design for visibility and crime prevention in all settings

Connectivity

- Connected lengths of trails make longer trips possible, increasing usefulness for exercise and other activities
- Provide trail access points to connect trails to bicycle and pedestrian networks in city rights-of-way

Context

- Trail changes to meet opportunities and constraints of its surroundings

Diversity

- Provide range of trails to meet needs of all ages and abilities so everyone benefits, including those with disabilities

(Trail Design Guidelines 2015)



### Active and Passive / Controlled and Uncontrolled Spaces

Parks contain a variety of spaces categorized into either active or passive. Active space encompasses organized activity, like sports that require more physical exertion, while passive space is more informal and allows for leisure activity, like sitting out or walking. Spaces within a park are programed to serve different user groups. These spaces, depending on the use, are laid out in accordance with how these activities will interact adjacent to one another. Programing not only dictates the use of a space, but also the scale, maintenance schedule, materials, and many other things. Active space generally requires some form of added infrastructure to the site, like paved walkways and restroom facilities. Because of the need for added infrastructure not only is the initial cost higher, but there are maintenance cost as well.  Maintenance of active spaces ensures that the area is in proper condition for active play and accommodates the needs of the users. Regular maintenance keeps a park looking manicured and controlled, meaning that it will remain in the state at which it was designed to be. Passive space is almost the opposite of active space. Passive space does not require additional infrastructure and is geared more towards minimal impact on the sites ecology and natural processes. Since passive spaces do not require the same type of upkeep and control that active spaces do passive spaces are able to remain more dynamic and responsive to the natural environment. Users still have the opportunity to interact with and view nature and its processes, but with a level of protection for the ecological components of the site. By providing both active and passive space users are able to view and experience the contrast between the structure of the built environment and the dynamic nature of the natural environment (Kowarik and Langer 2005).

The purpose of programing spaces within the two categories of active and passive stems from the need to minimize conflict, provide safety, and to accommodate needs of multiple user groups. In addition, the purpose of providing both manicured and “wild” environments responds to the need for natural space that is accessible and functional.

### Water Harvesting

Rainwater is a precious thing that is often taken for granted, and in accumulated quantities, rainwater runoff is treated as a problem instead of being treating like an opportunity. The current approach to site drainage diverts water away from the site and replaces the natural elements with impervious surfaces. This leads to the reliance on man-made systems and completely neglect natural systems and ecologies. Water is a resource not always easy to come by, especially in arid climates. However, there are strategies that can be applied that can help aid in water conservation. These strategies include using site appropriate plantings, educational opportunities, and passive rainwater harvesting earthworks, like basins and swales. Rainwater harvesting, simply defined, is the capture and use of precipitation at or as close to the point where it falls (Lancaster, Marshall and Lancaster 2013). By utilizing rainwater harvesting along with appropriate plantings a sites needs can be met as opposed to working against its natural functions.

There are numerous benefits of rainwater harvesting, besides providing a source of free water. Rainwater harvesting can aid in groundwater recharge, depending on the depth to the water table, it can reduce stormwater runoff downstream, and it can reduce erosion and nonpoint pollution. “In addition to its potential to generate considerable quantities of water, rainwater harvesting results in collection of decentralized water which makes it less expensive when compared with well drilling and water supply

from the public taps" (Aladenola and Adeboye 2009). This allows for the opportunity for a site to potentially be self-sustaining and cuts down on the cost of facilities and maintenance. At a small scale rainwater harvesting systems can fully support a full landscape. While at a larger scale, like an urban park, rainwater harvesting systems are not always enough to support the entirety of the sites vegetative growth.

Implementing a rainwater harvesting system into a site do however, mitigate some of the cost and reliance on municipal water sources.

Harvesting rainwater requires careful attention to the topography, the amount of water that falls on the site, the amount of water that is required for site vegetation, and downstream effects, to name a few.

**The Rainwater Harvesting Principles:**

- Begin with long thoughtful observation
- Start at the top- or highpoint- of your watershed and work your way down
- Start small and simple
- Spread and infiltrate the flow of water
- Always plan for an overflow route, and manage that overflow water as a resource
- Maximize living and organic groundcover
- Continually reassess your system: the "feedback loop"

(Lancaster, Marshall and Lancaster 2013)

**Rainwater Harvesting Earthworks:**

- Berm 'n basin
- Terrace
- French drain
- Infiltration basin
- Imprinting
- Mulching

(Lancaster, Marshall and Lancaster 2013)

**Summary**

Overall, creating a natural space in an urban setting goes beyond simply open space. It requires special care and attention to not only the environmental systems, but to the human systems as well. These natural spaces are created for both nature and people and display a respect for both types of environments.

**REUSE**

**NATURAL PARK**

**RUNWAYS**



# CASE REVIEWS

The Case Review section provides information to help develop the final design based on applicable approaches and similar context. Each project under review is presented briefly to highlight the key concepts and design implications.

## Denver Commons Park

Denver, Colorado
Jones and Jones and Civitas

## The Steel Yard

Providence, Rhode Island
Klopfer Martin Design Group

## Mercer Slough Nature Park

Bellevue, Washington
Jones and Jones

## East-West Regional Trail

Douglas County, Colorado
Architerra Group

## Orange County Great Park

Irvin, California
WORKSHOPWEST

## Tempelhof Airport

Berlin, Germany

# DENVER COMMONS PARK

**Denver, Colorado**
**Jones and Jones and collaboration with Civitas**

**Key Concepts:** Natural process, connecting urban and natural space, anchor for community and future development

**Design Implications:** Brownfield redevelopment, Nature and built environment working together, Natural processes demonstrated through stormwater and native plant palette, Anchor for urban redevelopment, A mixture of planned and natural spaces, Connects people with nature

Located at the base of  Denver's initial growth and development, Denver Commons Park successfully utilizes a once degraded site and turns it into one of the most cherished and utilized spaces in all of downtown Denver. The main concept of this live, work, and play space is to reconnect both sides of the Platt River and the natural systems and processes that once occurred there. The site is located within a 100 year floodplain resulting in careful and responsible design solutions were proposed to ensure the park would sustain flooding events. From initial design to site furnishing and art the publics participation has been a key factor in the success of Denver Commons Park. This project has been a spur for redevelopment and has created a space for community gathering while drawing historic connections to the origins of Denver. (Jonesandjones.com 2015)

Denver Commons Park offers amenities such as overlooks, informal sports areas, picnic space, areas for respite, and space for general play and recreational boating as well as 10 acres of habitat restoration, wetlands that buffer and cleanse stormwater, upland songbird habitat, and a half mile of reconstructed river bottom to support aquatic habitat and boating (Landscape Architecture • Civitas 2015). The park is accessible by multiple modes of transportation including bicycle, bus, and car, as well as easily accessible by foot. To facilitate the ease of access to the park three bridges link the surrounding context to the park crossing the Platt River, railroads, and a highway as well as several tunnels. The circulation through the park weaves both pedestrian and vehicular traffic allowing for greater connectivity as well as a more enjoyable experience.

Denver Commons Park is a great project to learn from for the redevelopment of Coronado Airport. Denver Commons Park demonstrates a successful application of stitching areas of diverse use into a space that responds respectfully to users and the surrounding context. Utilizing derelict spaces to mend broken or non-existent connections not only solves the issue of having an abandoned space, but can also offer economic and social remedies for the space.

# THE STEEL YARD

**Providence, Rhode Island**
**Klopfer Martin Design Group**

**Key Concepts:** Brownfield remediation, stormwater filtration/ reduction, purposeful design and place making

**Design Implications:** Utilizes existing structures, Stormwater management, Flexible space that allows for large and small events

The Steel Yard, like its name implies, was previously an industrial steel yard located in a blighted neighborhood of Providence, Rhode Island. The main concept of The Steel Yard was to promote neighborhood development and create opportunity for community engagement through the transformation of a brownfield (Asla.org 2015). The design occupies 3.5 acres of land and includes spaces for individual and group gathering, space for hosting large events that can accommodate several hundred audiences, movie/ event space, and parking. The design emphasizes the reuse of three existing buildings and five sets of overhead gantry cranes that helped create the sites identity and function. The three existing buildings were converted into interior/ exterior “spill-out shops” and artist studio space for the community.

The main design strategies included reducing soil disturbance, reconciling grade displacement, and re-introducing “urban wild” vegetation and habitat (Asla.org 2015). Due to the prior use of the site soil had to be removed and amended in order for the site to be developed. Traces of lead and chromium were found within the soil that was removed while other contaminations were treated on site or capped by either 12 inches of soil or by pavement (Asla.org 2015). Stormwater is managed on site by bioswales and permeable surfaces that allow the site to infiltrate 90% of the annual rainfall. The rain water is held and treated on site before being released back into the Narragansett Bay watershed. The main bioswale is in the form of a moat that surrounded a higher pavement grade at the center of the site. The moat is then filled with plantings used to filter the water and prevent erosion. Additional plantings are used according to the program of their designated space. For example, turf grass is used in the movie viewing space while taller ornamental grasses are used to screen undesirable adjacent views.

The Steel Yard is successful in its reuse of existing features and the activation of a blighted space. This project offers a creative approach in dealing with water treatment on site while also providing ample space for users to facilitate their own activities and programed events. Embracing a sites past in a redevelopment project offers many challenging obstacles, but through purposeful and caring design the past and present can respectfully complement each other.

# MERCER SLOUGH NATURE PARK

**Bellevue, Washington**
**Jones and Jones**

**Key Concepts:** Fully immerse users in nature while still having awareness of urban surroundings, natural process, wetland preservation, stormwater management, and education

**Design Implication:** Special attention to natural systems with minimal disturbance, Carefully created viewpoints, Multiple access points around the site, Minimal use of built elements

Located adjacent to the intersection of Interstate 90 and Interstate 405, just west of Seattle in the City of Bellevue, is Mercer Slough Nature Park. It is home to over 100 bird species and several dozen mammals, an uncommon occurrence within a large urban area. Besides being adjacent to two interstates the nature park is also surrounded by urban residential areas and is within walking distance of Lake Washington. The 320 acre site is predominantly a wetland preserve, but it is also a park as well. The design of this project is successful in its integration of both natural and built environments due to dispersing the built elements throughout the site as opposed to having a single large complex. It is “a unique collection of seven shed-style buildings, elevated above the forest floor and threaded through open spaces in the forest canopy, connected by aerial boardwalks that traverse the upper story of the woodland without disturbing the ecosystem on the ground” (Greensource.construction.com 2015).
By using this approach users are completely immersed in a natural environment with only subtle reminders that they are still within a dense urban area. The site circulation takes into account existing trails, which allows for numerous access points around the edge of the park. The trail system within the park is a total of seven miles long linking viewpoints, educational centers, and passive recreational spaces.

In order to maintain as minimal disturbance to the wetland area as possible the sites existing contours were left in place while walkways and structures are elevated to allow for natural stormwater flow. All runoff is filtered by gabion walls, bioswales, and compost-amended filter strips which help remove sediment before the runoff reaches the slough.

The Mercer Slough Nature Park, although in a completely different environment from the Coronado Airport in Albuquerque, New Mexico, provides several applicable approaches to designing a natural area without disturbing its natural systems. Additionally, the decision to intersperse the built elements throughout the site as opposed to a single large structure can be applied in similar ways to other projects looking to have minimal disturbance on a site and educate on environmental stewardship.

# EAST WEST REGIONAL TRAIL

**Douglas County, Colorado**
**Architerra Group**

**Key Concepts:** Balance user needs with environmental stewardship, special attention to regional context, interpretive and educational signage, minimize impact

**Design Implications:** Connecting trial systems and linking communities to the site, Special attention to natural systems with minimal disturbance, Multiple trailheads (access points), Interpretive elements

Located in Douglas County, Colorado, on the outskirts of the Denver metro area, lies the 20 mile East-West Regional trail. The trail currently links several residential subdivisions and in the future will connect to the City of Lone Tree and the Town of Parker (Douglas.co.us 2015).
The design of this project facilitated the connection of several regional trial systems as well as connections between adjacent neighborhood communities, schools, parks, and recreational centers. The East-West Regional Trail design focused on connectivity by providing numerous trailheads (access points), overlooks, underpasses, pedestrian bridges, and water crossings while easily serving a wide range of users. The design of the trail included drainage improvements, interpretive signage, and restoration to damaged areas. In order to respect the variety of ecological systems that the trail moves through special care and attention was taken in determining the layout and form of the trail trying to make as little impact to the landscape as possible. This was accomplished through using natural surface materials, minimal grading, working with existing vegetation and reseeding with native mixes in areas that were disturbed, and utilizing existing wildlife herd crossings (Aslacolorado.org 2015).

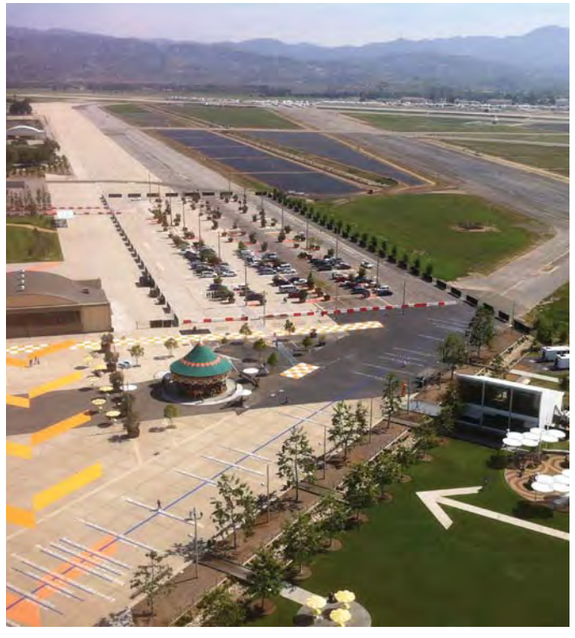
The East-West Regional Trail project demonstrates the ability to create links between natural and urban spaces, while simultaneously highlighting environmental stewardship. This project is successful in that it not only offers opportunities for recreation, but educates users on proper management of natural spaces and ecological systems as well as alternative implementation strategies for recreational space within a natural environment.

# ORANGE COUNTY GREAT PARK

**Irvine, California**
**WORKSHOPWEST**

**Key Concepts:** preserve site history, enhance social and ecological health, community interaction through involvement and education

**Design Implications:** Air base redevelopment, Central metropolitan park/ nature preserve, Interactive features to include users in site development, A mixture of planned and natural spaces, Runways are re-purposed as flexible event and activity space



Located on the former El Toro Marine Air Station in Orange County, California the Great Park is said to set new standards for great metropolitan parks around the world (Cityofirvine.org 2015). The park will be designed and constructed in phases over a long period of time utilizing input from users and surrounding communities while embracing sustainability, preserving Orange County's agricultural heritage, and honoring the military history of the site.


Currently only about 200 acres of the Great Parks entire 1,347 acres are complete. This completed area is being called Preview Park. It hosts concerts, dances, workshops, and additional special events to help gain support from the surrounding communities and to develop a strong sense of communication between users and designers to better influence the remaining development of the park.

From the currently developed 200 acres the most iconic element is the Great Park Balloon. The balloon is intended to get users involved in the design and development process by soaring up to 400 feet above the ground and providing a clear 360 degree view of the entire site. This attraction enables users to witness the Great Park grow and be a part of its development. "The Great Park Balloon is one of the largest tethered helium (not hot air) balloons and the first of its kind in the United States. It is environmentally safe, non-polluting, and virtually silent. Standing 118 feet tall with a volume of 210,000 cubic feet, the Balloon can hold up to 30 passengers in its 1,810 - pound gondola" (Ocgp.org 2015).

Proposed elements for the remainder of the Great Park include a canyon feature; a wildlife corridor linking the Santa Ana Mountains and the Laguna costal hills; daylighting a stream and reestablishing a floodplain area; a farm and food lab; as well as more common park elements like sports fields, and kids play areas.

Overall, the entire master plan for the Orange County Great Park emphasizes long term sustainability with energy production and conservation, recycling, native and xeric plantings, neighborhood connections, community gardens, park-once-spend-the-day transit, and education programs (Asla.org 2015).

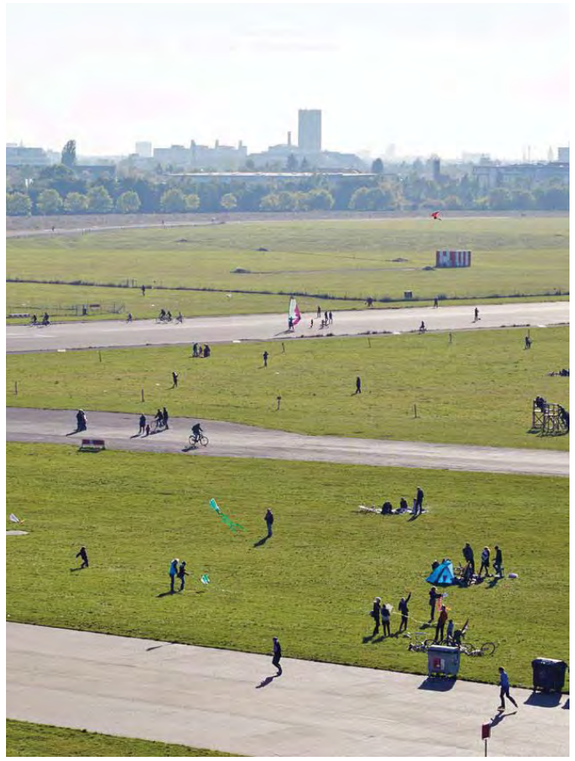
Although the entire Orange County Great Park project is yet to be complete there are still several approaches that can aid in the development of the Coronado Airport project. With both sites being abandoned airfields there are similarities in the desire to work with some of the existing airport elements. For example, the main implementation is the repurposing of the runways into features that can be utilized and programed while still keeping a symbolic and physical connection to the sites origin. Additionally, integrating activities associated to the sites history of flight is a clever way to include educational, interpretive, and interactive elements.

# TEMPELHOF AIRPORT

**Berlin, Germany**

**Key Concepts:** social interaction, user interaction with site, acknowledges sites unique history, simple spatial and programmatic zoning, emphasize the processes of nature, maintain openness

**Design Implications:** Connectivity to community and nature, Repurposing of existing elements, Flexible programing of space, Honor sites past




Tempelhof Airport, originally used for passenger travel and then as a military facility during WWII, has always been an icon for Berlin by symbolizing the connections of people and cities. The airport's location in the middle of Berlin disconnects neighborhoods and districts on either side of its 988 acre (400 hectare) site.  Although no longer used as an airport the area still maintains its original structures and tarmac, but is now officially a public park. Recently, GROSS, MAX, and Sutheland Hussey Architects won a design competition to redevelop the park by 2017 (Inhabitat.com 2015).

The main concept of the proposed design focus on the layers of the site's history and enhancing connectivity for both human and nature. Because of the vast expanses of this site an open 360 degree view is offered to its users making Templehof a one of a kind space. The proposed circulation around the site relates users to the scale of the former airport building while creating clear and simple program zones (World Landscape Architecture 2011). The programing for the proposed design emphasizes the transformation it has endured over time and the different uses it has offered. Several of the former airport structures will be used as viewing spaces where users can observe the natural process of both the sky and the ground plane. There will be enhanced connections to the surrounding neighborhoods as well as common park amenities at the entrances, while the center of the site will be used as a dynamic space for large seasonal events. Aside from the event space a large "Common" area will have a flexible program as an open field offering an antidote to the congestion of city life and a more natural, prairie like experience (World Landscape Architecture 2011). The park not only focuses on making connections for people, but also for nature by reaching out to the existing open space system of Berlin.

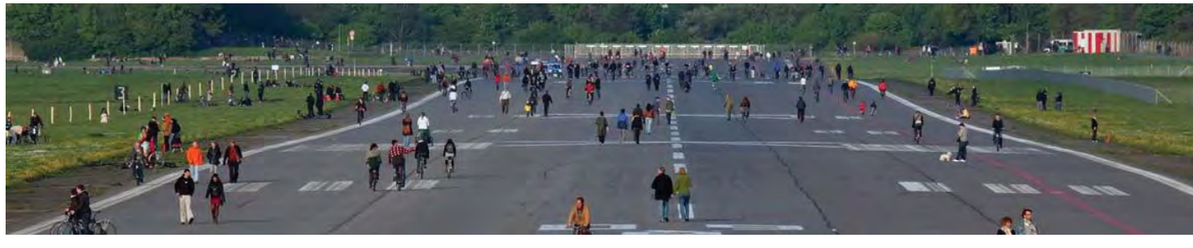
Though the proposed design is not yet constructed the current state of the park still attracts large crowds that utilize the vast expanse of space for activities that include picnicking, biking, gardening, and sports events. This use of space emphasizes the importance of open space as a necessity for people regardless of whether or not it is designed or programed.

The relevance of Tempelhof Airport to the

Coronado Airport redevelopment is based on the idea of leaving a site open both spatially and programmatically. The success of Tempelhof is due in large part to the flexibility of the site that allows for shared experience and a stronger social connection among users. Along with the openness and flexibility of Tempelhof it also relates to Coronado Airport in that it offers expansive views which aid in making it such an iconic place. Overall, the dynamic nature of Tempelhof is very influential on the design of Coronado Airport showing that a park does not have to be fully programed with every space designed and still has the potential to become an asset to its community.

## SUMMARY

Overall, each of the six case reviews discussed in this section offered design implications that are utilized in the development of the design proposal for the Coronado Airport site. The case reviews ultimately respond to the research question and project goals stated in the Introduction section of this document. Although each case review differed from the next there were common threads that could be found resulting in the conclusion that the final design proposed for the site is appropriate for its setting and has the opportunity to be a highly successful design if implemented.





# SITE ANALYSIS

The Site Analysis section identifies and diagrams Coronado Airport's most relevant features and conditions to inform appropriate and successful design decisions. Ultimately, the information and data collected has resulted in identifying areas of opportunity and areas of constraint that are addressed in the final design proposal.

## Site Transformation

## Climate Information

## Existing Plant Species

## Land Use

## Circulation

## Topography + Hydrology

## Opportunities + Constraints

# SITE TRANSFORMATION

As the environment and condition of the site changed over time so did the surrounding context. Within a matter of about 20 years the growth of the city reached the boarders of the Coronado Airport site. As shown in the aerial image from 1991, the Sandia Resort and Casino had yet to be constructed and the

1991

1996

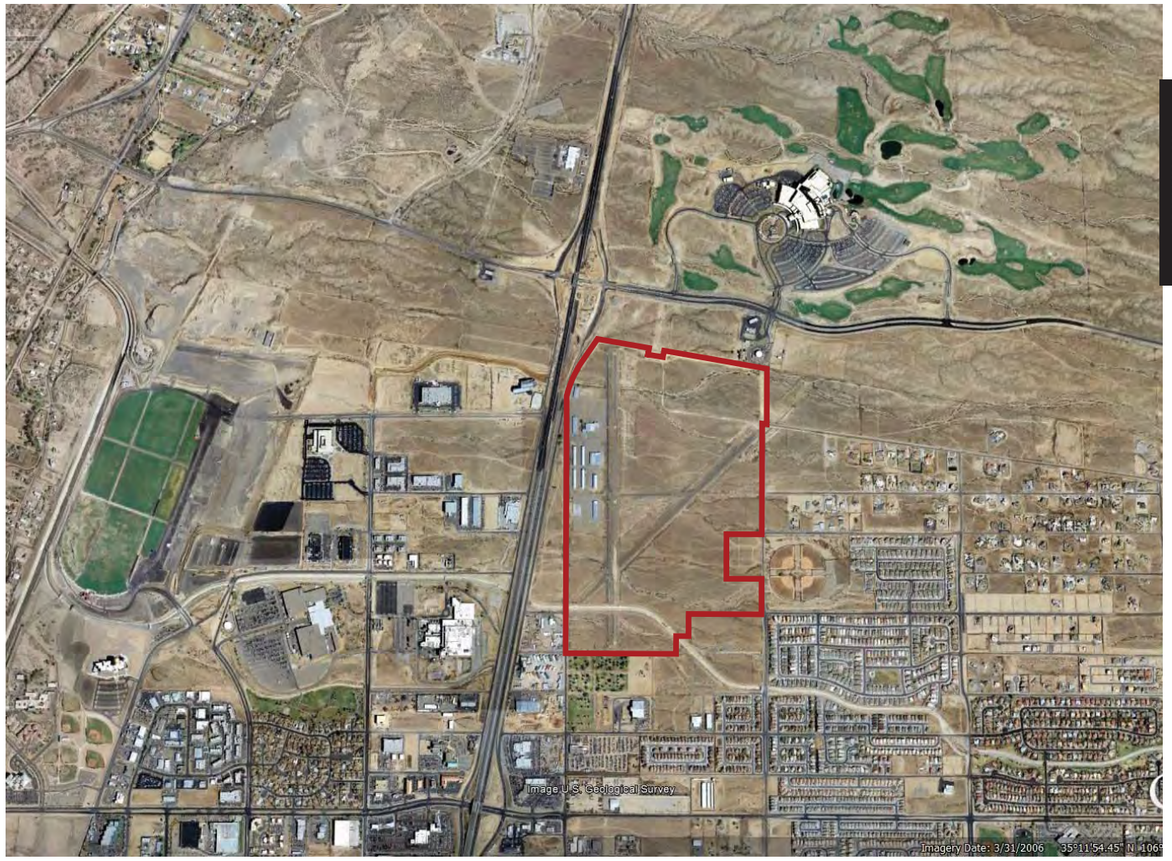
lengthy suburban roads were not yet paved. Some of the most drastic change can be seen between the years of 1996 and 2002. The aerials show large growth moving in from the south, as well as the addition of the Sandia Resort and Casino (without the golf course).

2002

2006

As time continued to move forward more industry moved in, neighborhoods built, and Balloon Fiesta Park was enhanced. The growth and development surrounding the site has aided in its value as a location in need of use and recognition.

2014

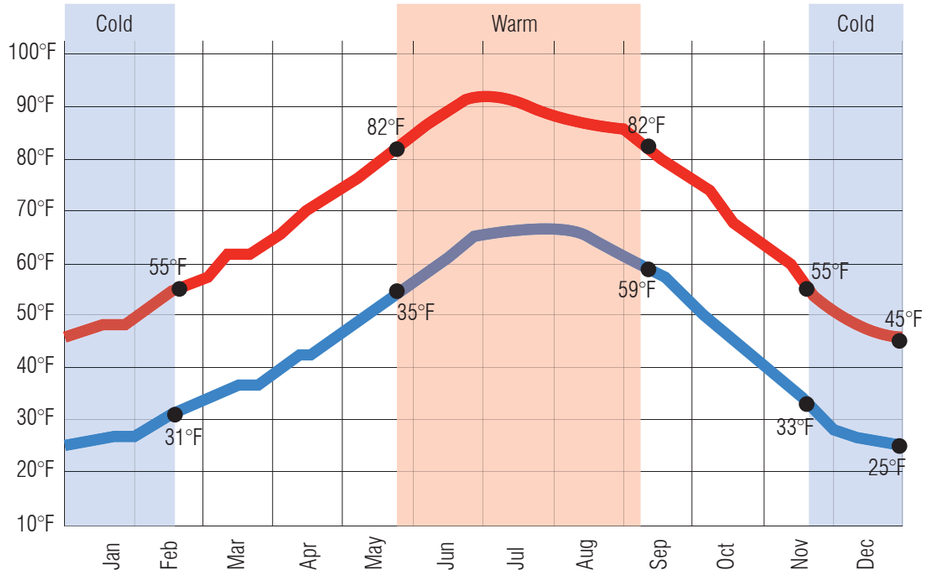


# CLIMATE INFORMATION

Albuquerque, New Mexico is considered to have an arid desert climate. It is located at the northern most boundary of the Chihuahuan Desert and near the edge of the Colorado Plateau. The summers are hot and the winters mild, with the spring being the windiest and driest of the four seasons. The city ranges in elevation from 4,900 feet near the Rio Grande River to over 6,700 feet in the Northeast Heights at the foothills of the Sandia Mountains.  Because of this difference in elevation the west side of Albuquerque is much warmer and dryer while the east side experiences a bit more precipitation.

### Daily High/ Low Temperature

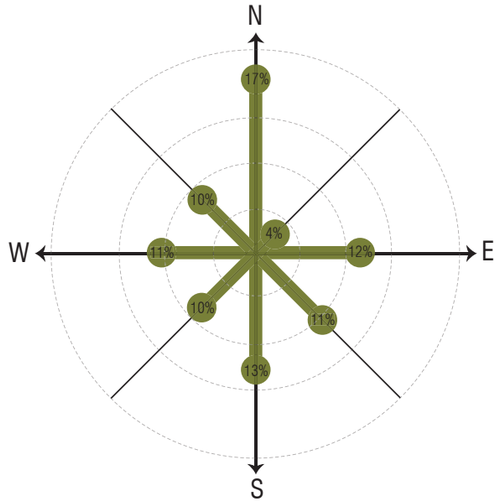
There are few days in which the temperature will exceed 100°F or be below freezing (23°F). The temperature difference from day to night usually ranges between 15 – 20 degrees. The warm season typically lasts between the end of May to early September and the cold season lasts from early November till February/ March.




### Wind Direction Over the Entire Year

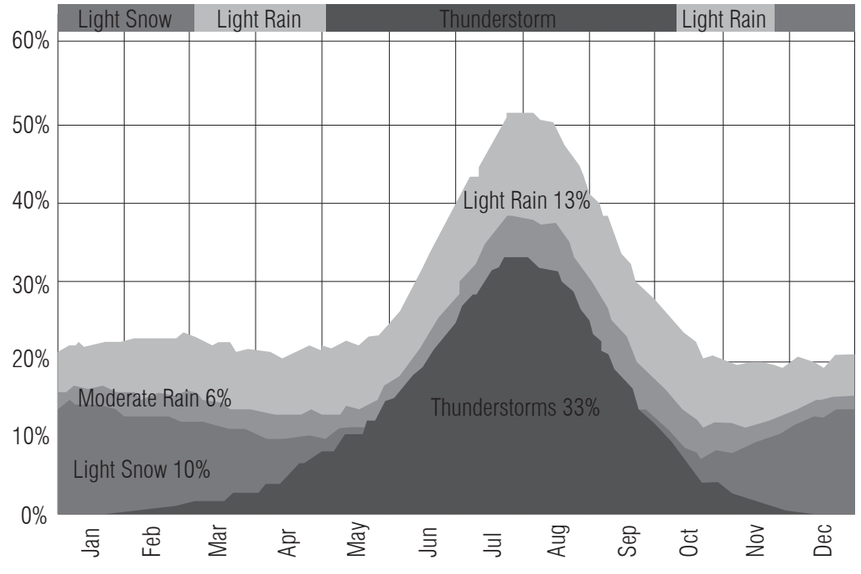
Typically throughout the winter months the majority of the wind blows from the north, while during the summer and spring months wind blows more so from the east and south. Wind speeds range between 0 mph to 21 mph with the windiest months being March, April, and May.

*The fraction of time spent with the wind blowing from the various directions over the entire year. Values do not sum to 100% because the wind direction is undefined when the wind speed is zero.* (Weatherspark.com 2015)




### Probability of Precipitation at Some Point in the Day

Precipitation varies based on location. Areas in the lower valley experience an annual precipitation of about 6-8 inches and the foothills/ Northeast Heights area can receive between 10 -17 inches of precipitation annually. The majority of precipitation occurs during the summer monsoons, between June and July with a 50% chance of rain (depending on the day).



# EXISTING PLANT SPECIES

Due to the site's former use as an airport it has relatively no tree cover or plant species that exceed five feet in height. Since its closure several species have been successful at propagating across the site in an attempt to return the landscape to its original aesthetic as prairie grassland. Most of the plants identified while on site are either native or naturalized plant species. With the lack of tree cover and shade providing plants, additional tree species need to be introduced onto the site to create a more inviting environment for users. Because of the self-sustaining success and natural return of vegetation to the site these species provide a nice foundation on which to carry out the goal of creating a natural park.

Arizona cottontop

*Digitaria californica*

Snakeweed

*Gutierrezia sarothrae*

Chamisa

*Ericameria nauseosa*

Silverleaf nightshade

*Solanum elaeagnifolium*

Aristida

*Aristida spp.*

Common Cholla

*Cylindropuntia spp.*

Wild-buckwheat

*Eriogonum spp.*

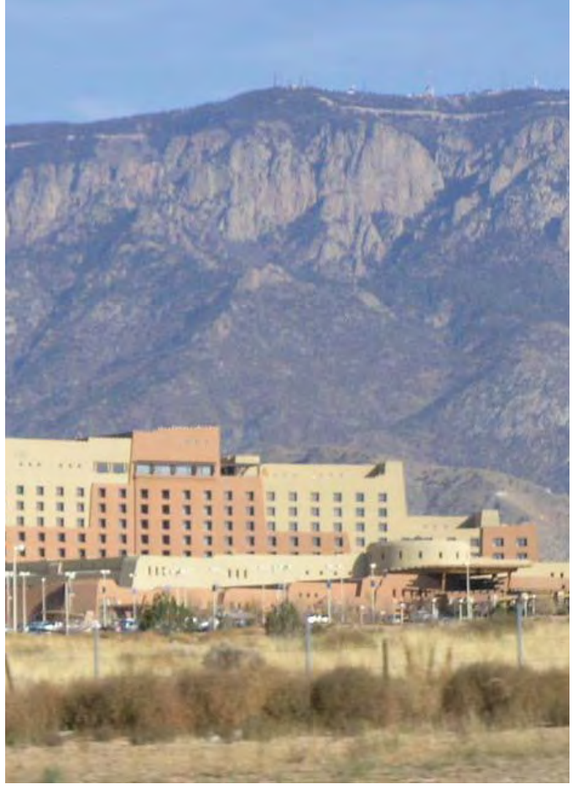
Spiny Goldenweed

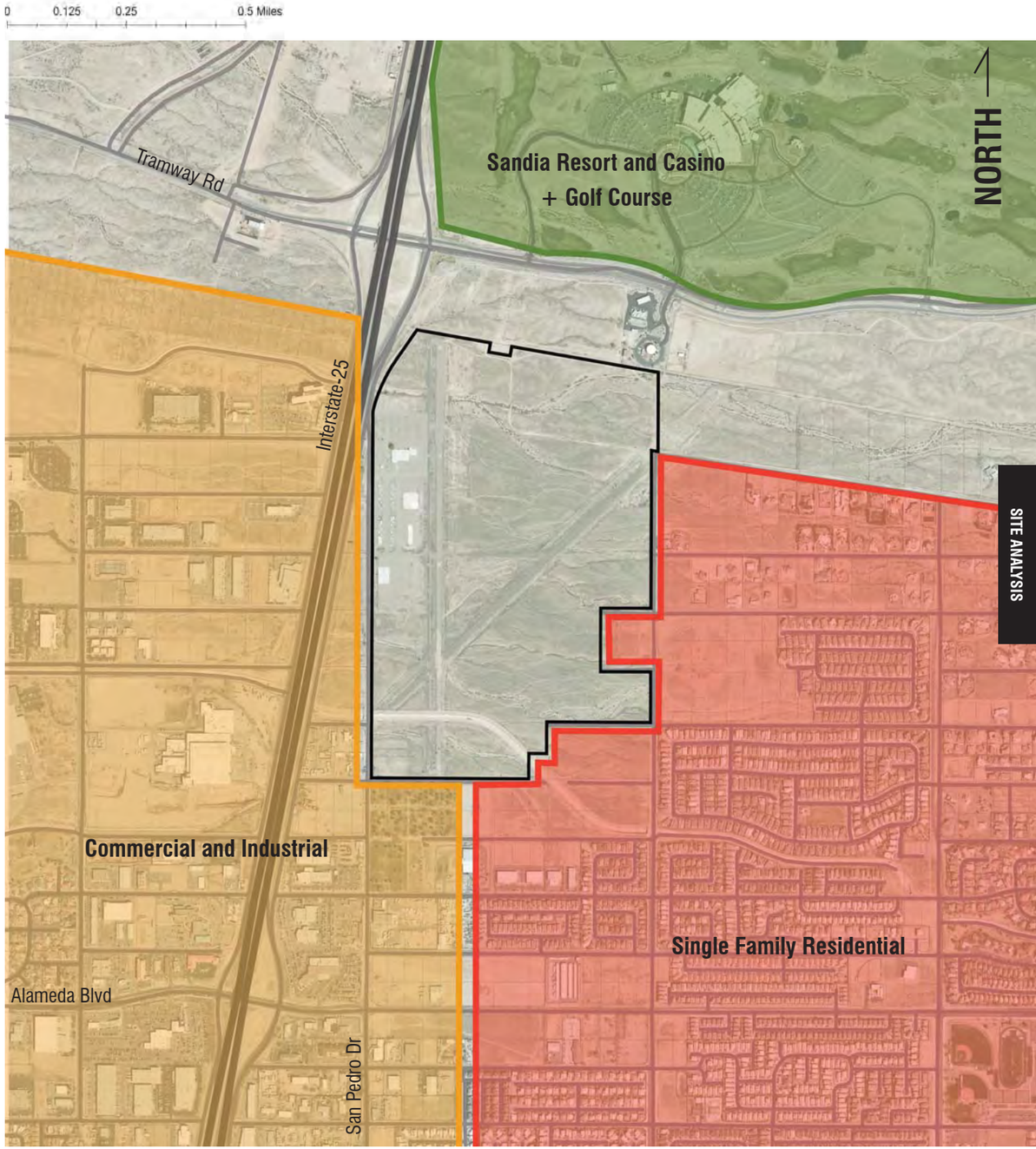
*Xanthisma spinulosum*

## LAND USE

To the north the airfield is bordered by Sandia Pueblo Reservation, the Sandia Resort and Casino and Golf Course, and a small buffalo preserve. To the east of the airfield sits a retired ball park stripped of its former use, a single family residential neighborhood, and the iconic Sandia Mountains. South of the airfield lies a small cemetery surrounded by several industrial businesses, including car repair shops and construction companies. To the west runs Interstate 25, the major north/ south circulation through the city and a main entry into the City of Albuquerque.

The site is surrounded by a unique arrangement of building scales which creates an interesting mosaic block structure and circulation pattern.





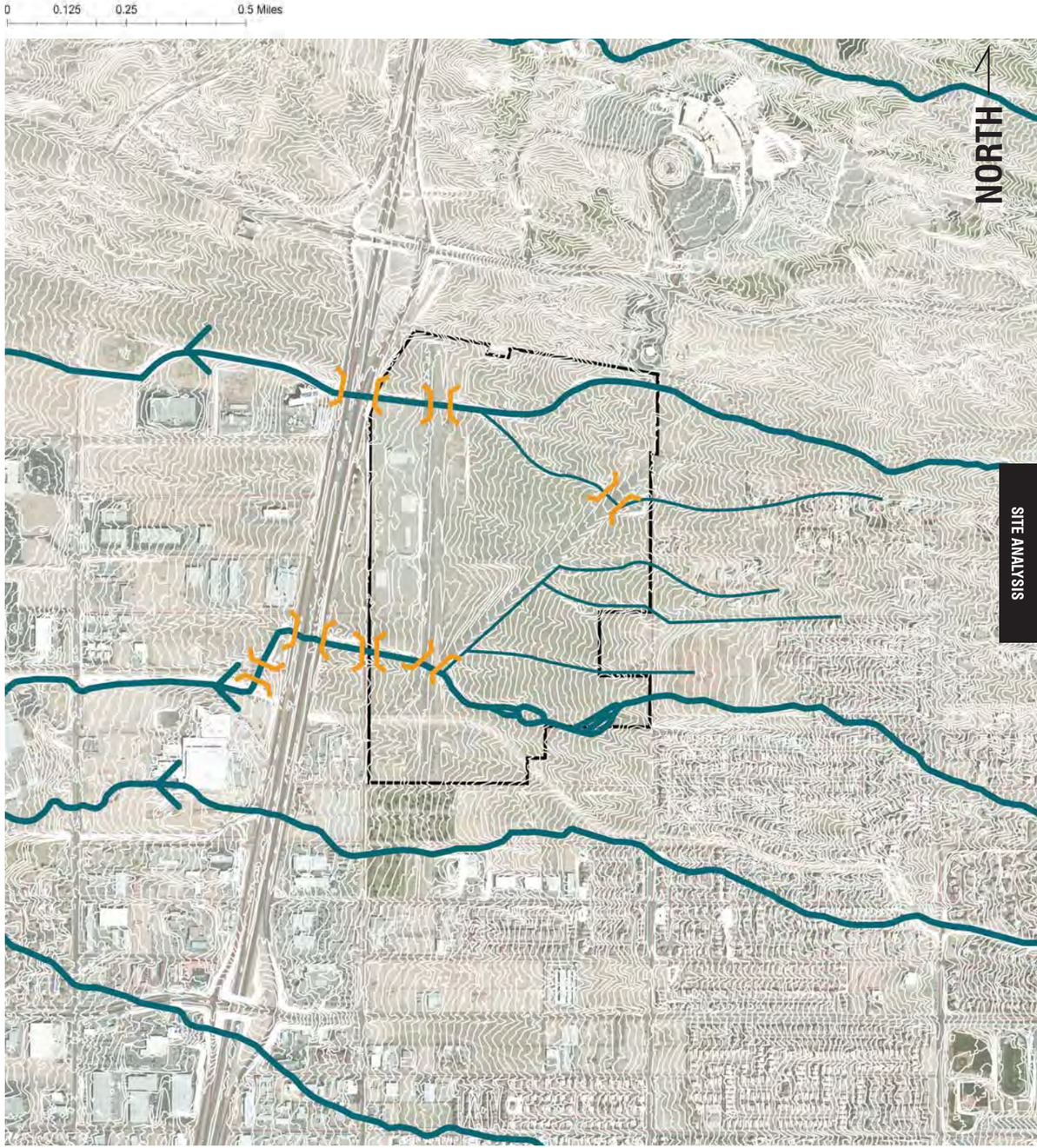
# CIRCULATION

Circulation around the Coronado Airport site appears to be disconnected and lacking to facilitate the needs of the area. Additionally, the site is relatively inaccessible by car, bus or bike.  Currently there is only one bus route option within walking distance to the southern edge of the site, but it is still about a half mile distance. Bicycle circulation is only shared space on surface streets and is not continuous in all areas leading to unsafe riding conditions. Vehicular access to the site is non-existent, however there are four access points on the east side, one on the south, and one on the west.

Due to the size and location of the site it is currently not within a comfortable walking distance from much of its surroundings, except for the few residence immediately adjacent to the eastern edge of the site. In order to promote walking to and around the site users need to have a reason to travel that distance.

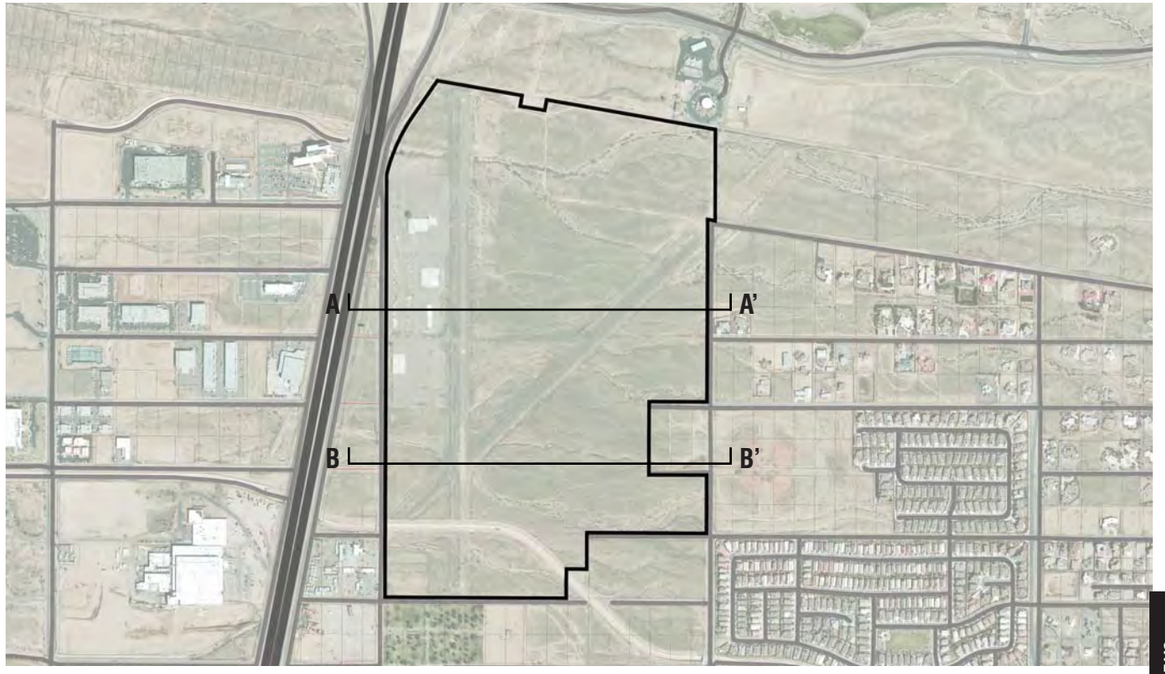
## TOPOGRAPHY + HYDROLOGY

The Coronado Airport has a number of arroyos that flow into the site, but they are redirected and culverted to avoid conflict with the runways. The arroyos ultimately connect to the larger AMAFCA (Albuquerque Metropolitan Arroyo Flood Control Authority) storm water system which leads to the Rio Grande. The arroyos are relatively shallow and have the highest amount of vegetation on the site. Due to lack of maintenance and care the culverts rarely function as they should. From site observations the culverts are clogged with trash, soil, and vegetation resulting in improper drainage and expedited decay of the runway paving.



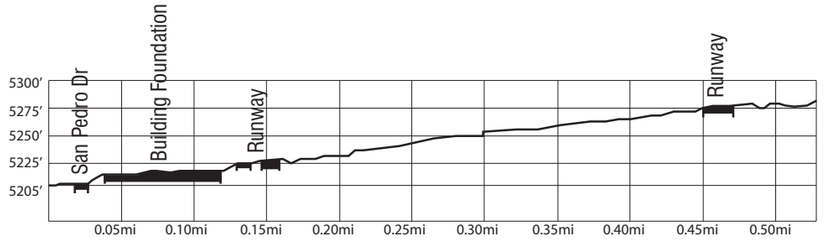
## TOPOGRAPHY + HYDROLOGY

The sites overall slope is roughly 3.4% from the east to the west. The minimal grade change across the site is due to its former use as an airport, which required the runways to be flat for take-offs and landings. One runway travels the distance of the site from north to south and the other runways is angled from the northeast corner to the southwest corner. Between the runways there are small instances of berms and swales in addition to the larger arroyos. The flat nature of the site creates an interesting setting for future development.




Min. Elev. 5205'
Avg. Elev. 5237'
Max. Elev. 5279'

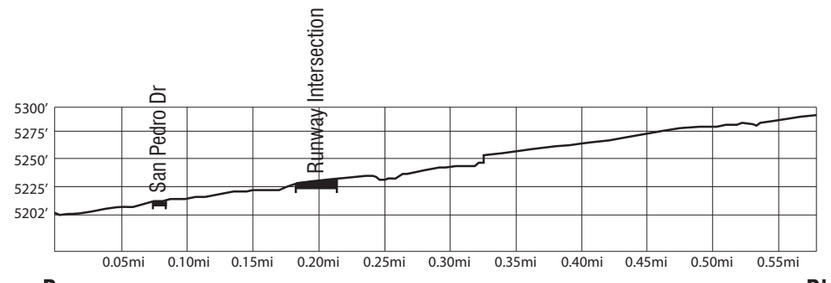
Avg. Slope 2.9%




A A'

Min. Elev. 5202'
Avg. Elev. 5255'
Max. Elev. 5299'

Avg. Slope 4.2%




B B'

# OPPORTUNITIES + CONSTRAINTS

After review of the site inventory and site analysis several opportunities and constraints were identified. Based on these findings conceptual ideas for site design were then developed and refined. The noted opportunities and constraints aided in identifying areas and ideas in which to develop an appropriate design.

**- No access from northern edge of site**

The currently inaccessibility from the northern edge of the site poses a constraint that keeps potential users from gaining easy access.

**+ Runway remnants**

The runway remnants are the only connection that remains from the sites former use. In order to highlight the past use as an airport and the contrast between the built and natural environment the use of the remnants is an important aspect of the proposed design.

**+ Natural arroyos**

The natural arroyos on site are currently shallow, but have the potential to be used to create a large water harvesting system that holds water on site for a longer period of time before releasing it into the adjacent channelized wash.

**- Culverts**

The arroyos that travel across the site are currently channelized under the remnant runways, but appear to be blocked with plant material and sedimentation from lack of maintenance over the years.

- No access from north

+ Runway remnants

+ Natural arroyos

- Culverts

- + Minimal grade change

**Average Slope 3.4%**

+ Views from site

- Views across site

**-+Minimal grade change**

The distance across the site, from east to west, is almost half a mile with a grade change of about 85 feet. This results in an average of about 3.4% slope from east to west. The site is not a constant slope and has several small undulating forms.

**-+Views from site**

Views to the east and west of the site are very iconic, both the Sandia Mountains and the Balloon Fiesta Park have strong connections to Albuquerque.

**- Views across site**

Views across the site from the north to the south reveal a small cemetery and an industrial area while the view from the south to the north displays the immense hotel and casino.

**- Low vegetative coverage**

The site is sporadically vegetated by small low-lying plant species (mostly grasses). This suggests that any type of shade providing vegetation will need to be planted and maintained for several years to become fully established.

**- Noise**

Although the site is adjacent to Interstate 25 the noise pollution is only audible from the western edge of the site.

**-+Site scale**

The scale of the site is extremely large for an urban park. The possibility of overdesigning or underdesigning is possible and could be problematic. Although, there is opportunity to be creative in organization and layout and it also allows for the possibility of offering new types of activities that are not offered elsewhere in Albuquerque.

- Low vegetative cover

**Grasses Shrubs**

- Noise from interstate

- + Site scale

**Approx. 268 acres**



# DESIGN APPLICATION

The design proposed for Coronado Airport is the culmination of each of the preceding sections; Literature Review, Case Reviews, and Site Analysis. This section presents the site program, which is based on the proposed goals and objectives introduced at the beginning of the project, and the design concept. Ultimately, only one concept was selected for the final design of the site leading to an overall master plan.

## Design Program

## Design Concepts

## Final Concept

## Major Elements

## Master Plan

## Focus Areas

# DESIGN PROGRAM

The design program is based on specific elements and activities that respond and relate to the project goals and objectives ultimately resulting in a final design solution.

### Over Arching Project Goal

To create a landmark park for the City of Albuquerque that highlights the contrast between the built and natural environments while exhibiting the importance of flight in Albuquerque.


**Objective:**

Utilize existing infrastructure, including one or both runways, to facilitate activity and provide visual cues of the past use

**Key Activities:**

- Self directed information and interpretation trail
- Contemplation
- Viewing areas
- Balloon Fiesta “quick view”

**Major Elements:**

- Orientation and directional signage (way finding)
- Interpretive elements
- Elevated viewing/ observation areas

**Objective:**

Aid in reestablishing ecological health

**Key Activities:**

- Water harvesting
- Education
- Revegetate arroyo edges

**Major Elements:**

- Native/ naturalized plant palette
- Informational signage on water process

**Objective:**

Create spaces for both active and passive recreation

**Key Activities:**

- Walking/ running
- Biking
- Picnicking
- Open play
- Kite flying

**Major Elements:**

- Passive trail system with interpretive elements
- Active trail system for biking and running
- Elevated viewing areas
- Tables and benches
- Parking
- Open field

# DESIGN CONCEPT - Edge Effect

The main focus of the Edge Effect concept is the contrast between the built and natural environments. The overlapping of the two sides (built and natural) creates a central activity spine along the existing north-south runway. Foundations from the former airport buildings represent the built environment while the arroyos flowing from the east to the west and the extension of the buffalo preserve would create the natural edge. The central spine would be the main location for programed activity with more passive features like trails and interpretive elements on the edges. The arroyos would be designed to flow into a series of basins that parallel the runway creating intimate spaces for picnicking and respite. The foundations from the former airport hangers would highlight the sites former use through interpretation and education focusing on the temporality of the built environment.

**Opportunities + Constraints**

+ Contrast between built and natural environment

+ Water harvesting with micro basins

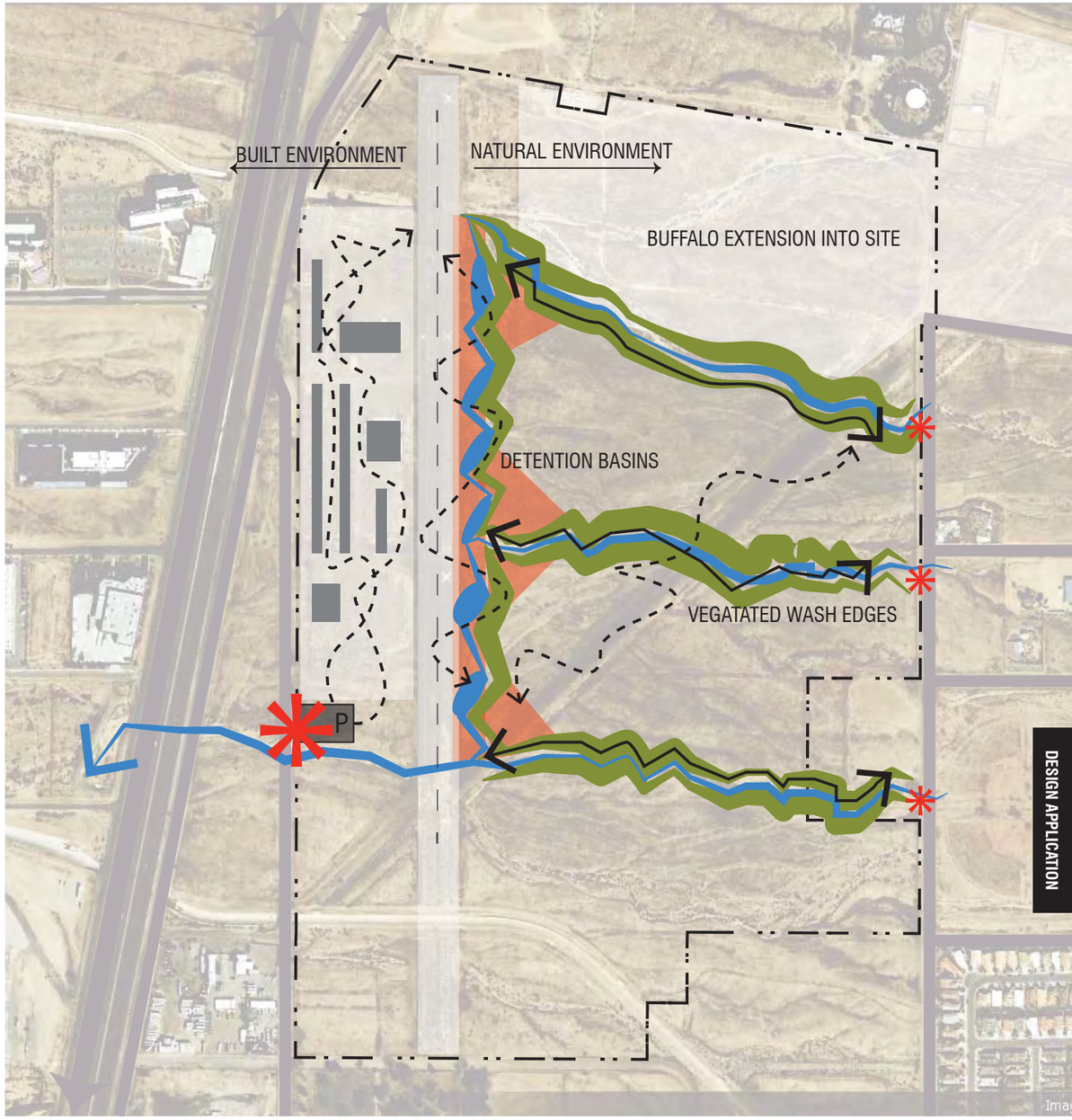
+ Space left for future development (ex. housing, commercial, tourism, etc.)

+ Central spine that allows for fixable activity (play or respite)

- No connection to resort/ casino

- Minimal remnants of former use

- Few trail route options



# DESIGN CONCEPT - The Lookout

The Lookout utilizes the form of the existing runways to create major circulation paths and high points in the landscape. The high points physically elevate the users and provide direct views towards the iconic Sandia Mountains and towards Balloon Fiesta Park while also creating a sense of interest through the undulating landforms. Additionally, the arroyos would be structured to converge at a central detention area creating a hub for gatherings and activity. The arroyos would also create multiple access points and provide a variety of trail routes.

**Opportunities + Constraints**

+ Elevated viewing areas

+ Landform manipulation

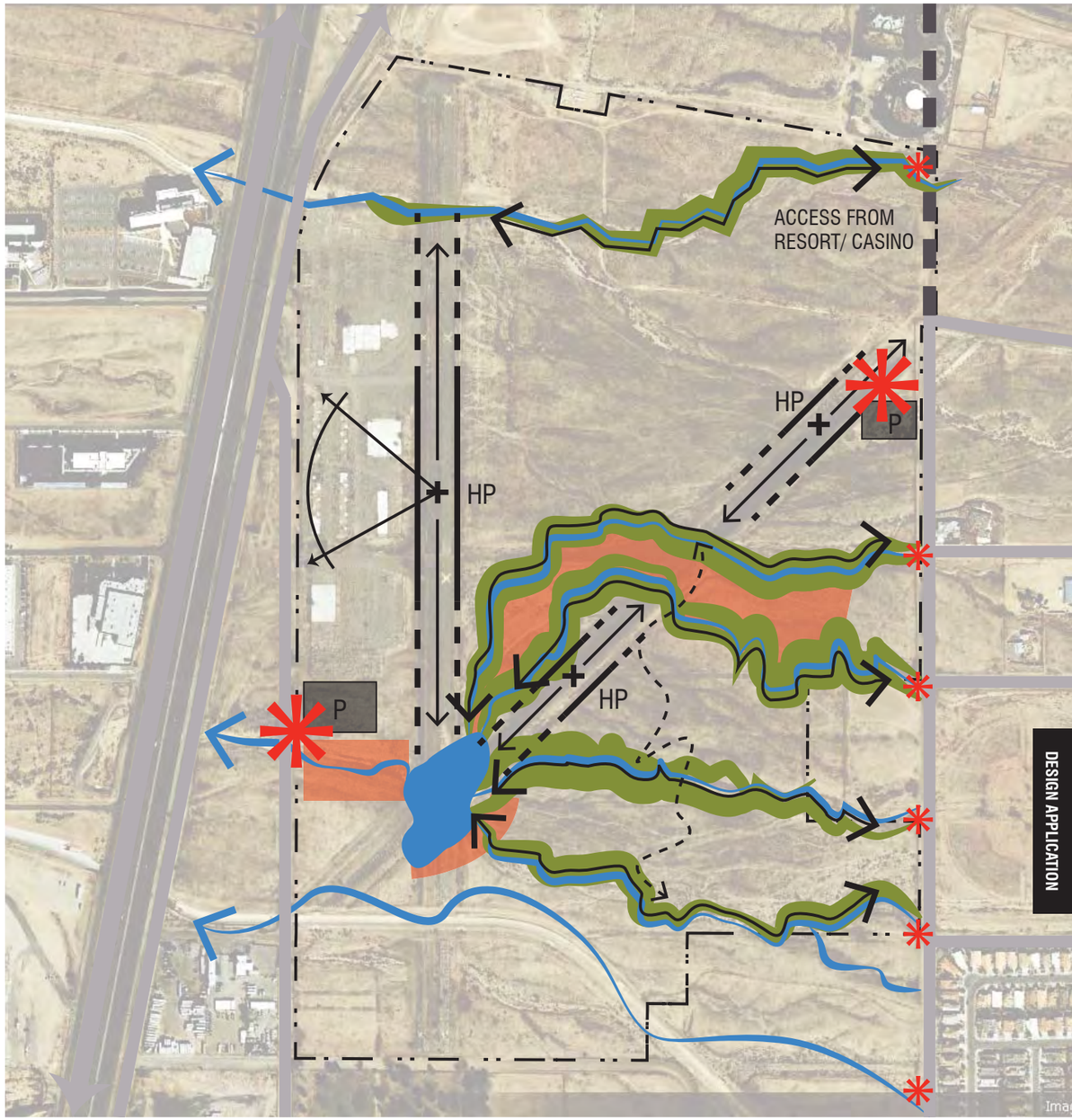
+ Multiple access points

+ Multiple trail route options

+ Connection to resort-casino

- No remnants of former use (only form)

- Large central detention basin



# DESIGN CONCEPT - The Adventure

The Adventure is a discovery based concept that utilizes flight, interaction, and investigation. The main focus would be reconnecting the site and its users with new forms of flight activity, such as remote control airplane flight fields; and the mechanical workings of airplanes. Plane parts and other airport related elements would be dispersed throughout the landscape to create a self-guided, informational exploration tour that educates users on the interworking of flight and flight facilities. Along with reintroducing flight, the existing runways would be used to organize the layout of spaces and circulation across the site.

**Opportunities + Constraints**

+ Immersion into natural space, minimal exposure to surround

+ Multiple interpretive trail routes

+ Elevated viewing area

+ Reintroduction of flight

- Only passive activity

- Minimal remnants of former use

- Minimal access points

- No connection to resort/ casino

# FINAL CONCEPT- New Heights

The final concept, New Heights, incorporates the most dominant features from each of the preceding design concepts into one cohesive plan. These features include: the contrasting of the built and natural environments, enhancing views, and reincorporating flight into the site. The overarching focus of New Heights is conveying the feeling of flight.

Additionally, the final concept addresses some of the constraints that were identified through the site analysis. For example, a pedestrian connection is proposed in order to facilitate minor access to the site from the northern edge. By allowing pedestrian only access from the site's northern edge vehicular circulation is kept at a minimum in an effort to not disturb the residential area with an increase in traffic volume.
This concept offers the best solution for the goals set by the research question at the beginning of this report.

**Opportunities + Constraints**

+ Contrast between built and natural environment

+ Multiple trail routes

+ Multiple access points

+ Elevated viewing areas

+ Reintroduction of flight

-+ Pedestrian connection from resort/ casino

- Mainly passive activity

# MAJOR ELEMENTS

There are four major elements of the final design, which respond to the project objectives in an innovative and responsible way: division of spaces, utilization of runway remnants, tower structures, and site circulation.

## Spaces

The final design is organized into different areas based on activity type, designed space, and natural space. These spaces are oriented in response to the runway forms as well as based on their level of activity relative to access points.

- **Orange** designates flight space and incorporates alternative approaches to aeronautics including remote control (R/C) airplane flight and tethered balloon flight. This space is located at the northern most point of the designed area due to the need for open air space for safe flight practices.
- **Blue** represents the active recreational space and includes elements that facilitate the feeling of flight such as a zip line, a series of large slides, and a kite flying field. This space is located the furthest away from the entry and parking lot in order to draw users further into the site and to provide ample space for activities.
- **Yellow** highlights the entry space which includes passive recreation and viewing opportunities. This space is located nearest to the parking lot for ease of access and shorter visits to the site.
- **Green** areas represent the spaces left natural or near natural, and provide a physical and visual connection to the surrounding context and systems of the site. These spaces were decided upon based on the concept of utilizing the already disturbed spaces (i.e. the runways and building foundations) for proposed built features as opposed to disturbing the natural space.

# MAJOR ELEMENTS

## Runway Remnants

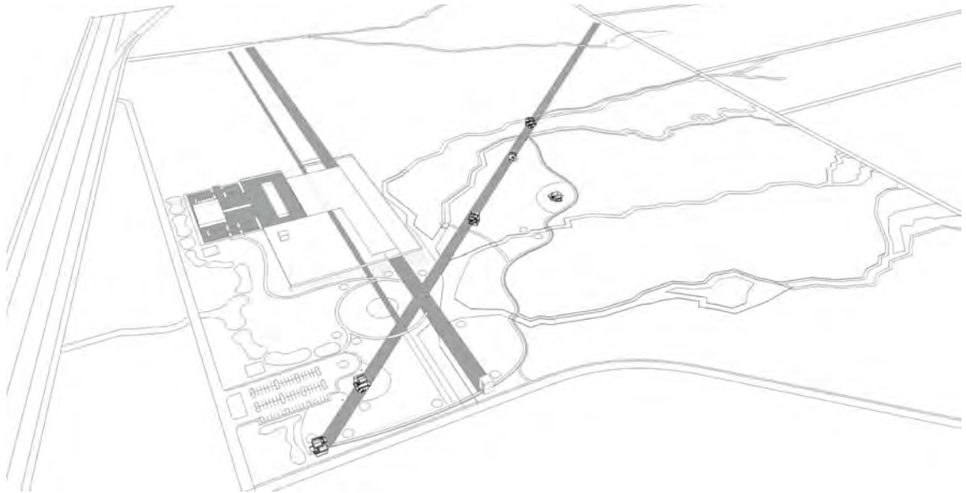
As a former airport the sites remnants consist of two runways, a large area of asphalt and some concrete slabs where the airport buildings and hangers were located. Since the site has not been maintained for the past several years the runways and other remnants are slowly crumbling into the landscape. In order to meet the goal of highlighting and reusing the site remnants specific program elements were identified that would best utilize those spaces. For example, a section of the north-south runway is proposed as a remote control airplane runway and other sections serve as walkways. Additionally, the layout and form of the runways were one of the key influences the overall design and circulation.

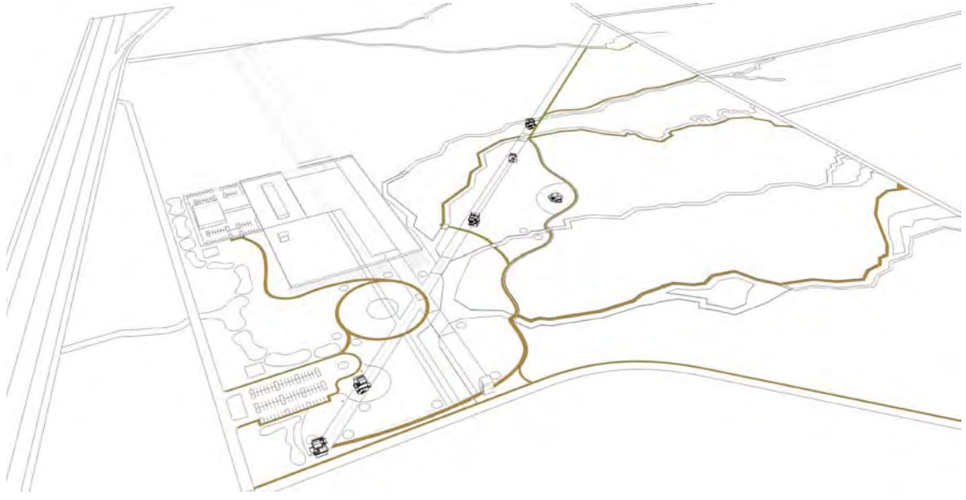
## Towers

One of the greatest opportunities of the Coronado Airport site is the views to the Sandia Mountains and to Balloon Fiesta Park. In order to emphasis and celebrate the iconic views elevated viewing platforms were introduced. These structural forms respond to the sites past use and new aesthetic and function while providing a clear unobstructed 360 degree view around the site and its context. Also, select towers function as activity features and provide alternative recreation associated with the feeling of flight.

## Circulation

The sites circulation is dictated by a series of paved and unpaved multi-use pathways. The circulation not only helps to dictate the sites layout and uses, but it also connects users to the sites former use as an airport and to the natural environment.





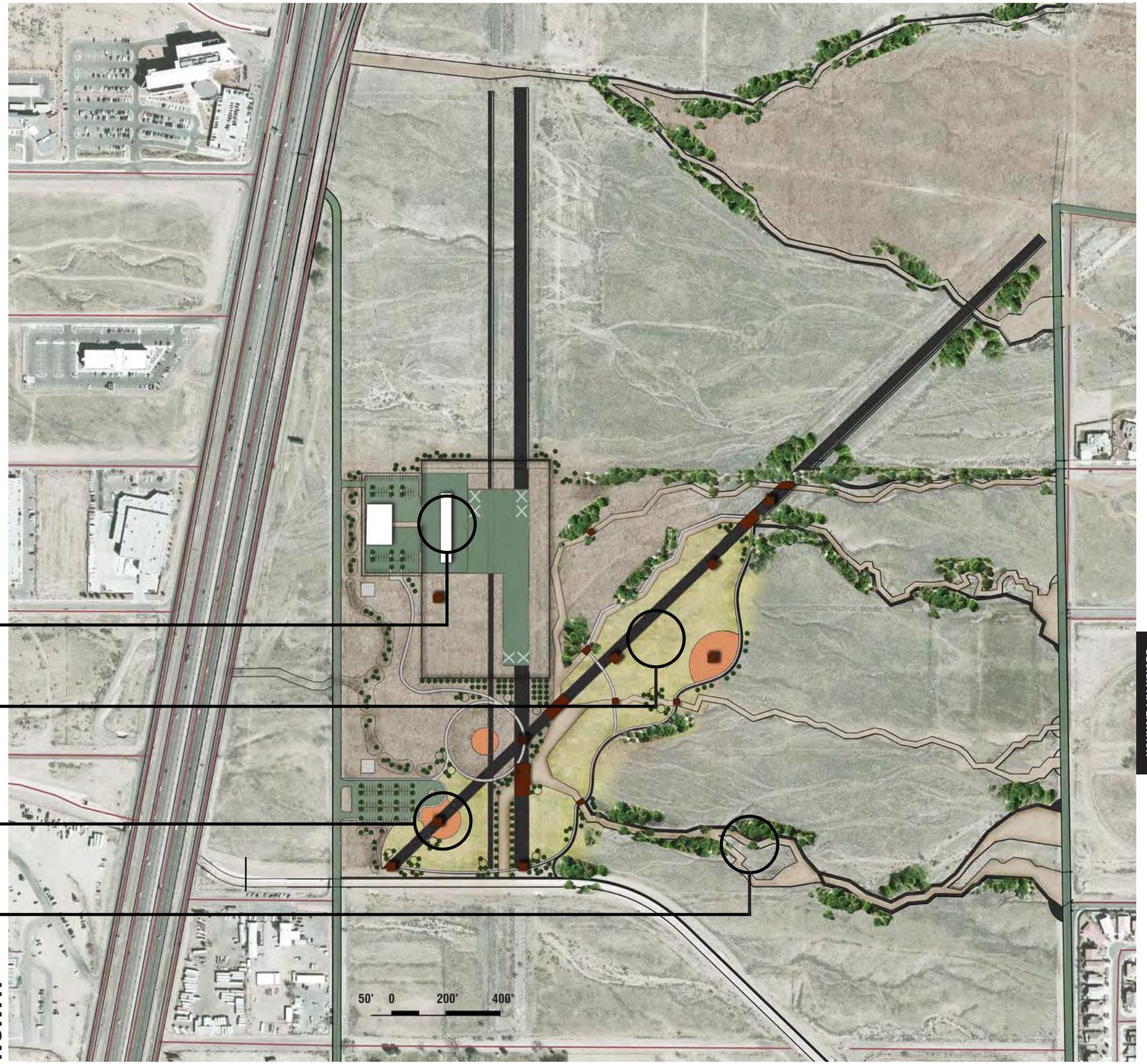
# MASTER PLAN

The rendered master plan displays the overall feel and appearance of the proposed design for the Coronado Airport site. The natural space of the park is the most visually dominant feature and clearly demonstrates the goal of highlighting the contrast between built and natural environments. Additionally, the runway forms are more apparent and visible drawing on the connection to flight.

1. Parking/ Entrance
2. Remote Control Flight Field
3. Detention Basins
4. Picnic Space
5. Balloon Lift Ride
6. Zip Line
7. Slide Tower
8. Kite Flight Field
9. Observation/ View Towers
10. Mixed Use Trail
11. Trail Head
12. Flight Sculpture Pad
13. North side pedestrian access
14. Buffalo preserve extension

# FOCUS AREAS

Four focus areas have been selected to demonstrate the use and design of the major elements of the design proposal; active and passive space, use of runway remnants, towers, and circulation options. Each focus area preforms in a unique and individual way that contributes to the whole overarching goal of the project.



The model airplane flight filed reintroduces flight to the site in a very literal sense. The field is located based on reusing of a small portion of one of the existing runways and the proximity of its overfly area to the surrounding context. Additionally, former hanger locations are reconstructed to serve as a pilot station and an operations building. Due to the condition of the existing runways the proposed flight field would need to be resurfaced and fitted to meet the Academy of Model Aeronautics (AMA) site specifications.

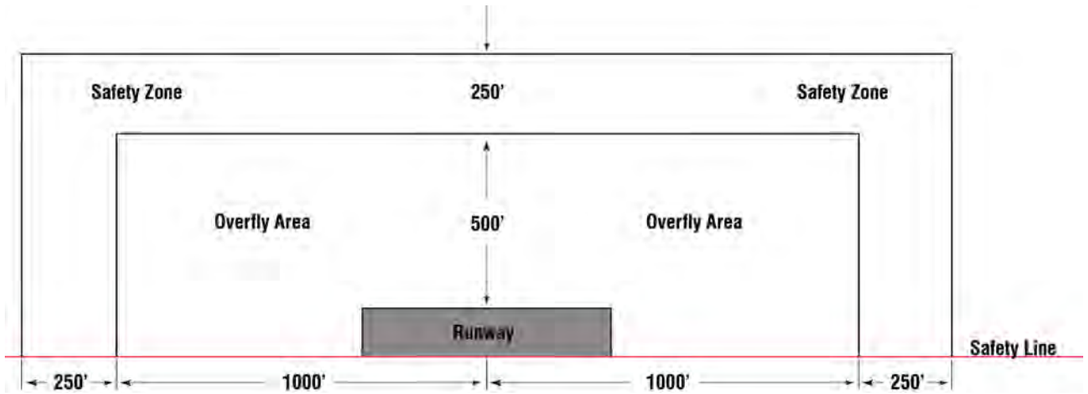
## Model Airplane Flight Field

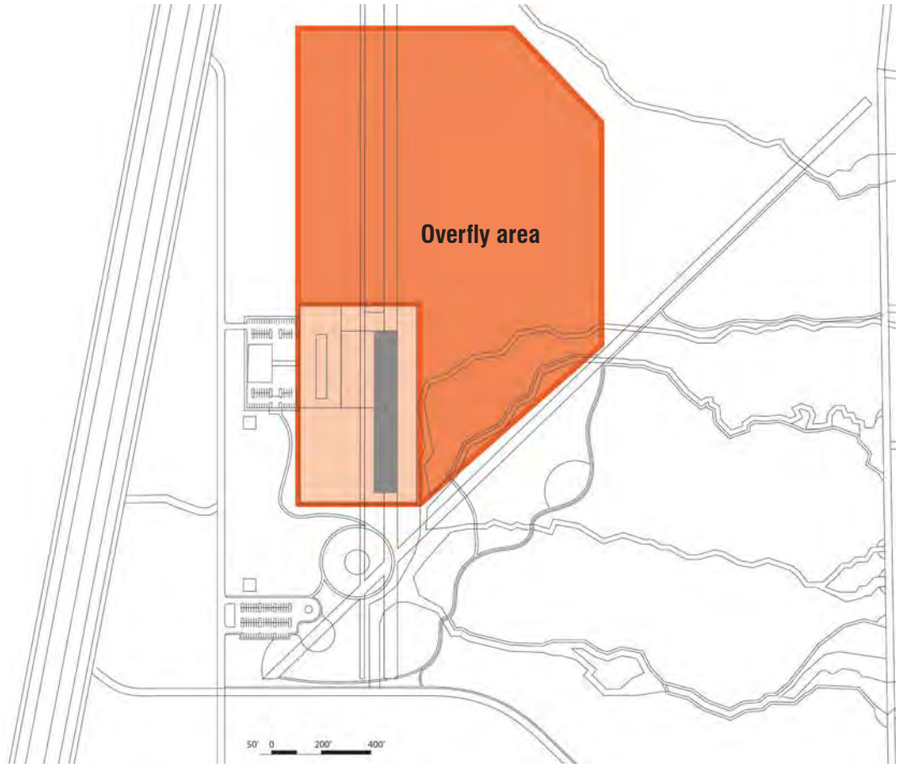
## Model Airplane Flight Field

Model airplanes are a fun and creative way to explore flight. People of all ages and skill sets participate in this recreational activity and some even compete in competitions around the country. There are several levels and types of recreational flight that pilots can participate in (free flight, control line, and radio control). In order to become a model airplane pilot you must complete a series of trainings with an instructor before becoming certified. There are currently nine AMA charter clubs within the greater Albuquerque area with approximately 300 members (Modelaircraft.org 2015). By introducing a new flight field in Albuquerque there is potential for more clubs and members to become active in this exciting recreational event and potentially spurring a new reason for visitors to come to the area.

Airplane wings are used as a barrier around the flight field and serve as an interesting sculptural element.

In order to design this flight field there were suggested site specifications from the AMA that needed to be followed. A simplified diagram below demonstrates the basic space requirements for a flight field (distances can be increased or decreased based on site usage) (Modelaircraft.org 2015).



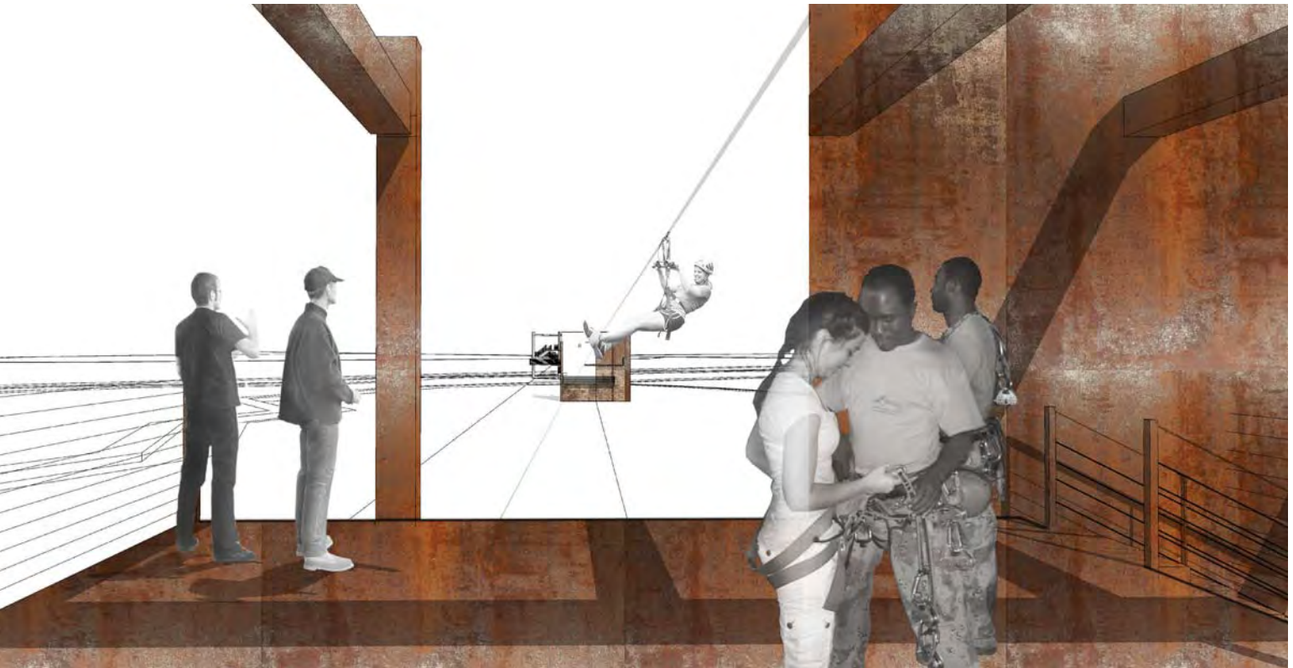
## Activity Field

The most central portion of the site is dedicated to active recreational activities that evoke the sensation of flight. The feel of flight can be described as the rush of breeze on your face, the feel of weightlessness, and the exhilaration of soaring without a care or confinement. This is accomplished through alternative park elements, like a slide tower and a zip line. Additionally, this portion of the site has a widespread and open field area to allow for clear views and open active play. Users are able to create their own games and events in this open area and without interference to other activities.

# Activity Towers

### Zip Line

The zip line links two towers, and is elevated forty feet from the ground and extends approximately 500 feet in length above a former runway. The runway below is left as-is to display the dynamic nature of the built environment. The zip line towers differ from the others on site not only through function, but they are designed to facilitate additional activities over time.

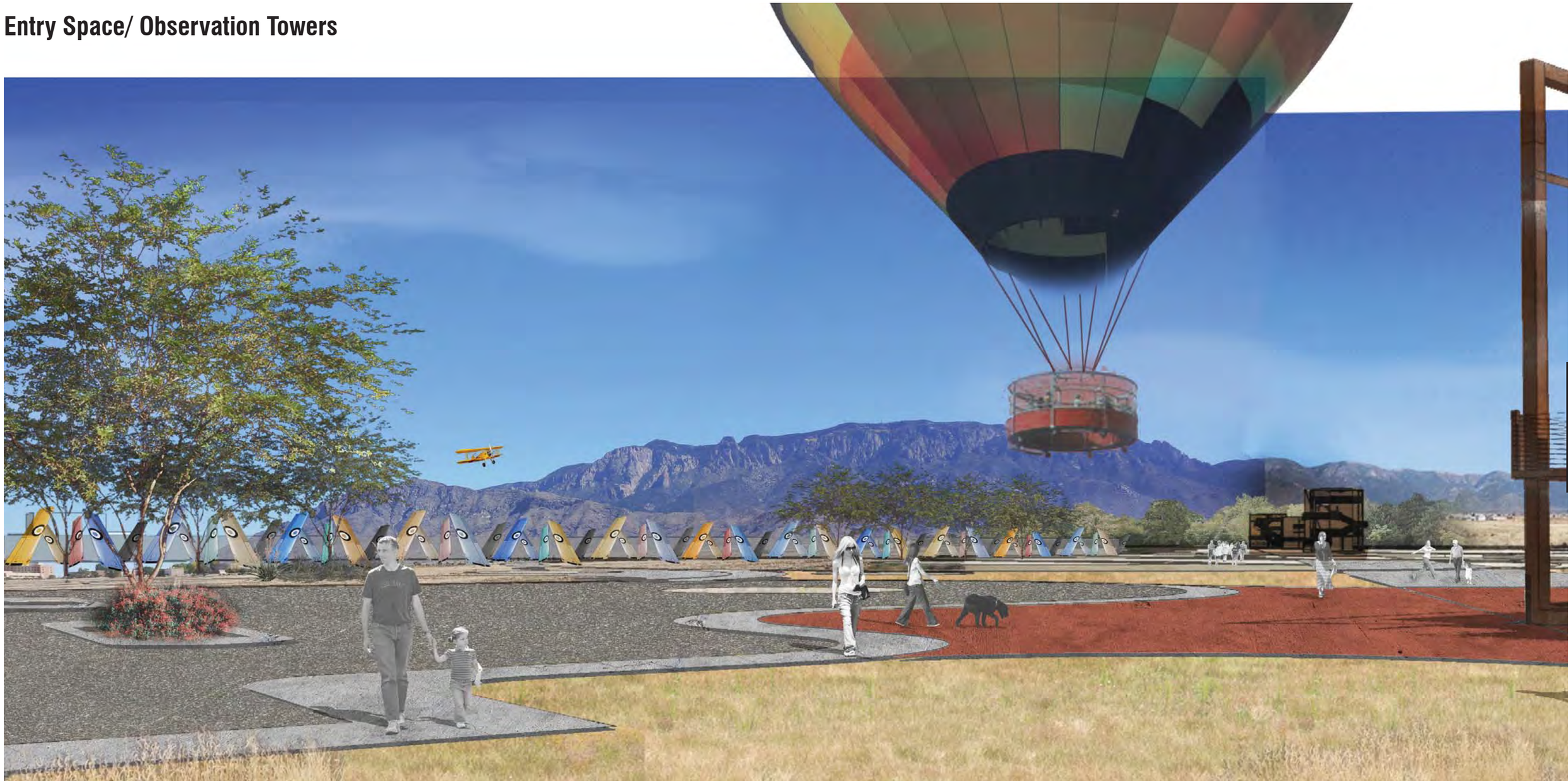


### Slide Tower

The slide tower functions as an enhanced jungle gym with multiple slides, both open and covered, serving all age types and levels of ability. Rushing down a slide at a quickened pace provides a sense of thrill and excitement in a controlled environment creating a connection to the feeling of flight.

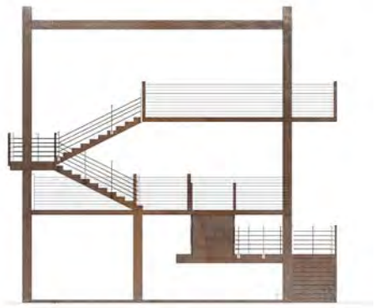
The main entry area to the park acts as a passive open space where visitors can picnic, walk their pets, observe the model airplane field, take flight on a tethered balloon ride, or climb the multi-layered observation towers. This area is designed to showcase all the influential elements of the site; flight, views, connections, and the contrast between the built and natural environments.

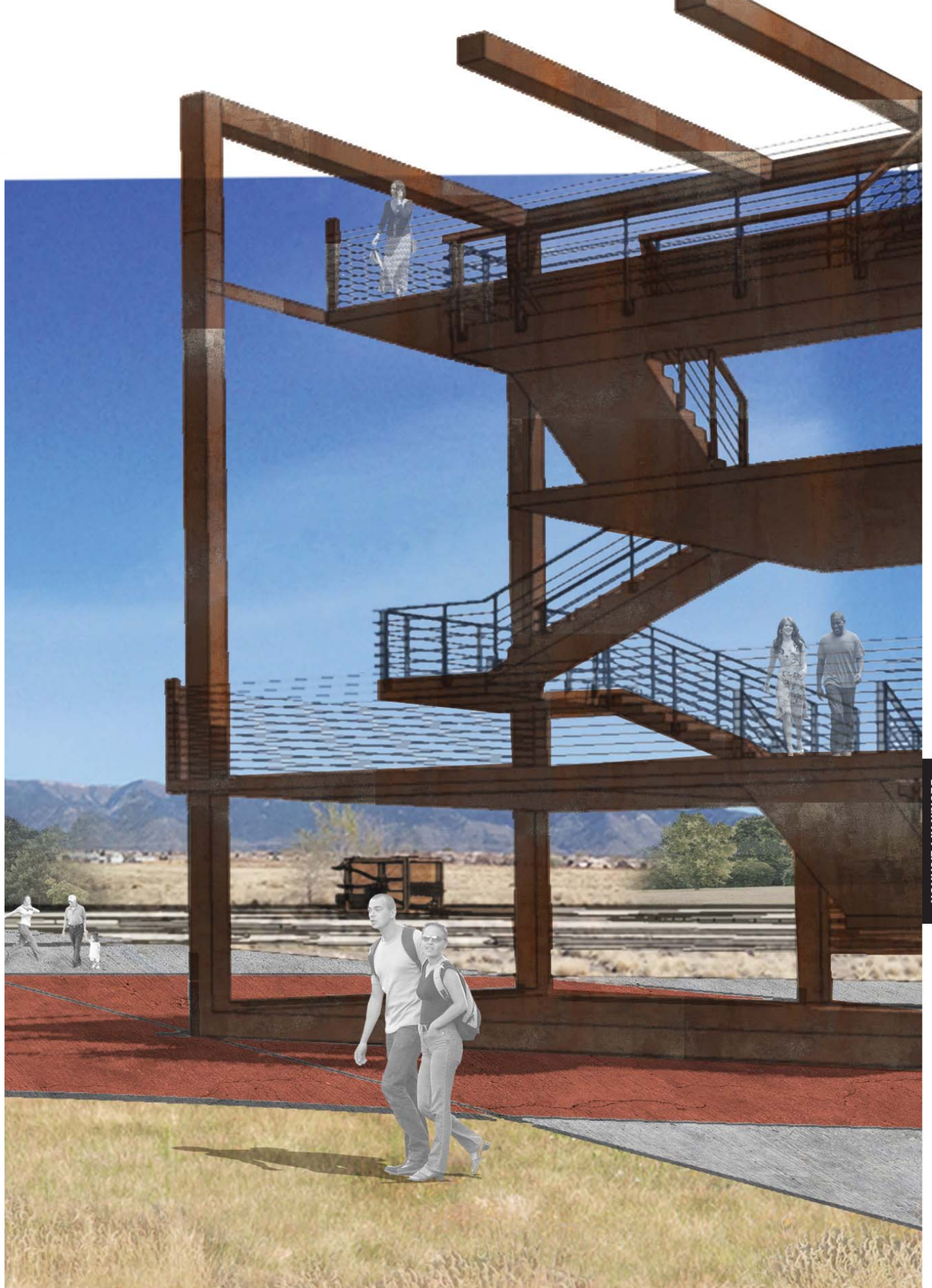
## Entry Space/ Observation Towers



## Entry Space/ Observation Towers

The observation towers are one of the most iconic elements on the site. These features not only provide enhanced viewing areas, but they provide an amenity that no other park in the Albuquerque area has. The towers aesthetic is representational of the built environment and appears to be either incomplete or falling into disrepair. They are constructed from large steel beams and staircases left with areas of void creating a sense of permeability that allows for a 360 degree view of the entire site and surroundings. Each tower is oriented in different rotations to provide variety in movement and form. The towers are large enough to facilitate open circulation while also providing areas to sit and rest. Ultimately, no view or experience from the towers will be the same.





*You haven't seen a tree until you've seen its shadow from the sky.*
— Amelia Earhart

## Entry Space/ Balloon Flight Feature

Albuquerque is known for many things, but mostly for the Albuquerque International Balloon Fiesta. Every year since 1972 Albuquerque has hosted this spectacular event, drawing in hundreds of balloonists from around the world and more than 100,000 spectators for a span of nine days every October. Even though this may be the largest balloon flight of the year that does not mean they don't make other appearances. It is a common occurrence to catch several balloons high in the sky above the city on a crisp morning other times throughout the year.

Because of the strong connection to flight on the site and the sport of ballooning in Albuquerque a balloon flight feature is located at the center of the site where the two runways intersect. This feature provides users the ability to experience flight in a passive and universally accessible way.

## Multi-Use Trail System

The multi-use trail system is an extensive network of paved and unpaved trails that circulate across the site linking both sides to adjacent streets while moving through the multiple areas on site. The numerous trail routes weave you in and out of both the natural spaces and the built spaces providing an enjoyable and interesting commute. Trail lengths vary based on use and material, providing options for more leisurely strolls or  more active, high speed activities.

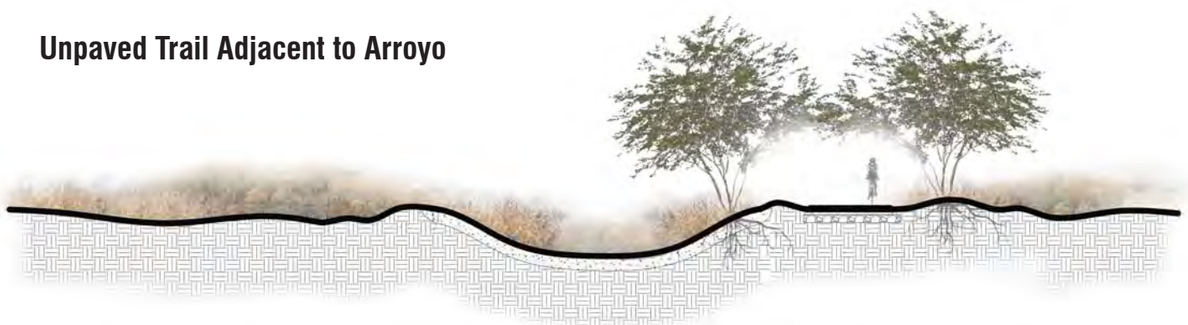
## Multi-Use Trail System

With a total of over three miles of trails, each offering new connections and experiences through a series of junctions, the trail system is one of the main features of this site. They provide opportunity for recreation, exercise, and stimulation. The trail system guides users over the arroyo system, down the former runways, and to the surrounding context. These paths are the circuitry that create the sites spaces and allow users to be fully immersed in this new type of park experience.

### Path Over Arroyo

### Path Over Arroyo

### Unpaved Trail Adjacent to Arroyo



### Paved Paths

1.08 miles

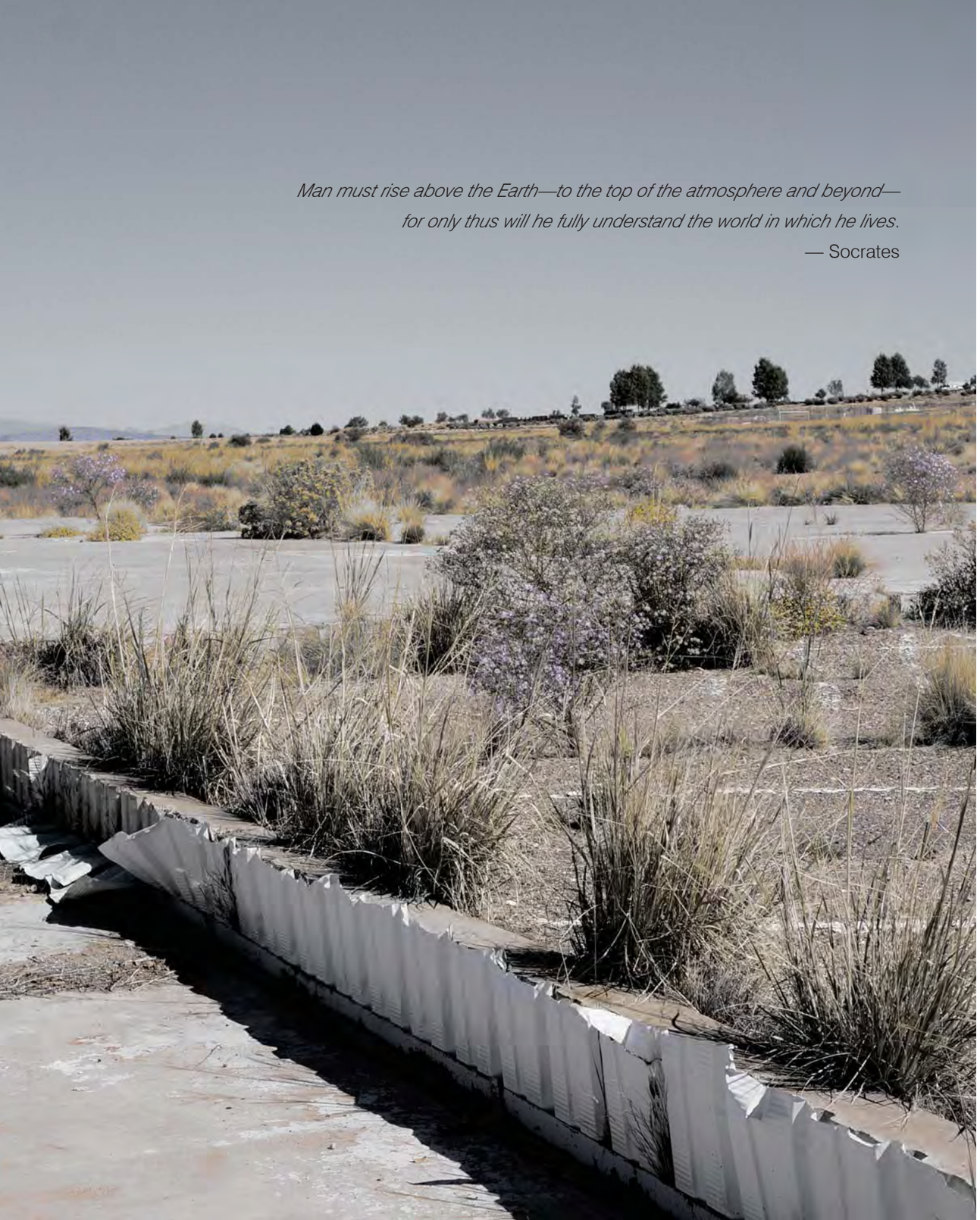
### Unpaved Trails

.64 miles

### Bicycle Routes

1.6 miles

*Man must rise above the Earth—to the top of the atmosphere and beyond—*
*for only thus will he fully understand the world in which he lives.*
— Socrates



# CONCLUSION

Overall, this report succeeds at creating a landmark park for the City of Albuquerque that highlights the contrast between the built and natural environments while exhibiting the importance of flight in Albuquerque.

- Activities associated with flight
- Numerous trail route options
- Enhanced viewing opportunities
- Preservation of natural space
- Evidence and connection to sites former use

## FUTURE RESEARCH AND CONSIDERATIONS

The research and design process of this report explored several different topics at a variety of depths. If more time allowed I would like to investigate many of these topics in further detail and utilized the information to strengthen the supporting research and improve the proposed design.

- Exploration of materiality
- Water harvesting and evapotranspiration calculations
- Additional flight activities
- Economic considerations
- Tourist development/ Stronger interaction with Sandia Pueblo

Ultimately, this report was intended to encourage exploration and discussion of alternative uses for abandoned spaces with regard to the City of Albuquerque and its residences.

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